Southern California's Computer Magazine

May 29, 1990 • 70

FREE

MicroTimes™

Peter Norton

NORTON UTILITIES COME TO UNIX & MAC

"UNIX is going to continue to thrive beautifully on Intel hardware, but it's not going to take a single sale away from Windows and from OS/2. Windows and OS/2 represent the natural growth path from DOS. DOS is forever." See Page 32

NEC's Color Portable:

"This computer is the beginning of a revolution that will undoubtedly come to dominate the laptop field. In time, most portables will have color displays."

STORY ON PAGE 40

Professional Amiga Animation Studio:

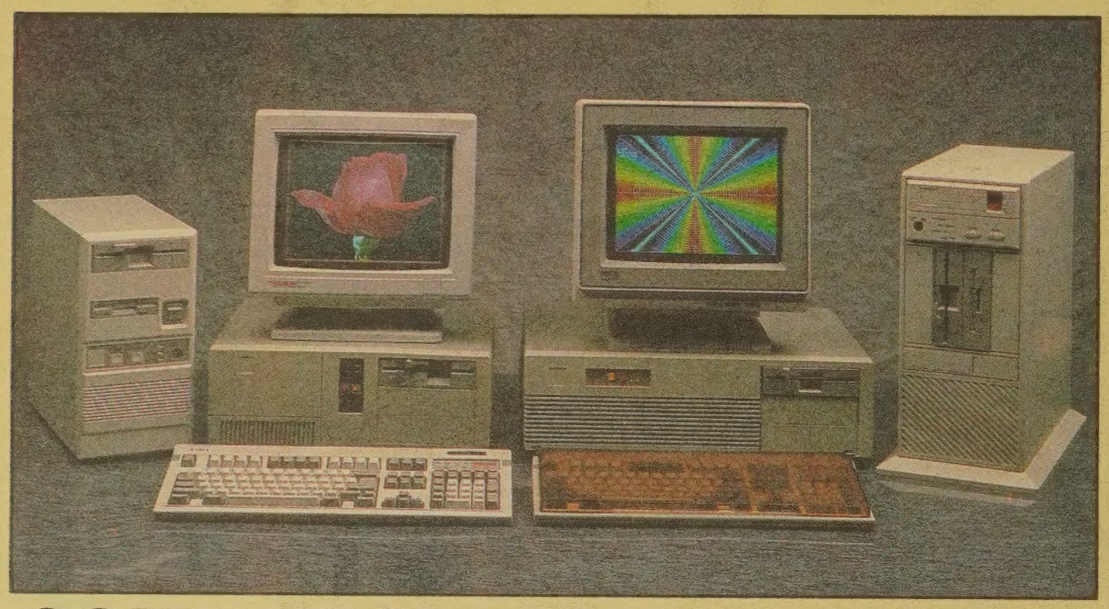
"Disney Animator Heidi Turnipseed has handily replaced expensive gear for a few thousand dollars with an 8mm camcorder, a digitizer, a few pieces of software, and an Amiga 2000."

STORY ON PAGE 60

COMPLETE 386SX SYSTEM $1295

WITH 40MB IDE HARD DRIVE ! ONLY

Standard equips with the latest technology of IDE hard drive, gives you ultimate performance in its class. (Performance: TRK: TRK seek 3.75 MS, DOS file transfer speed 145 K/sec) more than 300% faster than the past technologies — MFM & RLL.



Standard System Feature

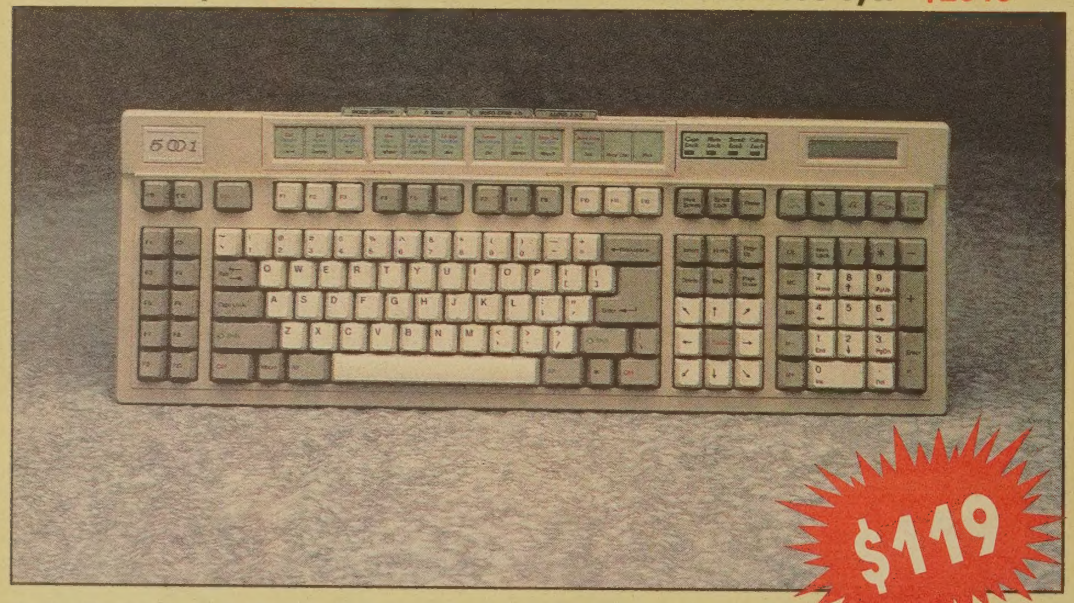
- Genuines Intel **80386SX** Microprocessor.
- **8/16** MHz ϕ Wait State dual speed hard/software selectable.
- **1 MB RAM** expandable to a system total of **16 MB.**
- **40 MB IDE** hard drive (1:1 interleave, 28ms).
- **5.25" 1.2 MB** or **3.5" 1.44 MB** diskette drive.
- Mono graphics controller, 12" high-res amber display **MONITOR** with tilt/swivel base.
- 102 keys enhanced **ALPS** switch tactile/click keyboard.
- 2 high speed serial ports plus one parallel and one game ports.
- **80387SX** math coprocessor support.
- Case with security lock & led indicators.
- Built in real time clock & calendar.
- Dual diskette and hard drive controller.
- 8 industry standard expansion slots.
- **200-WATT** power supply.
- VGA systems include the high performance 16-bit **PLATINUM** video adapter and **MONITOR.**

Mono 12" Sys. $1295 VGA 640×480 Sys. $1675
Super VGA 1024×768 Sys. $1825

COMPLETE 386-25 MHz HARD DRIVE SYSTEM ONLY $1635

Standard equips with the genuines intel 80386-25 MHz microprocessor. 40MB IDE hard drive. (1:1 interleave, 28ms) 300% faster than MFM & RLL hard drive. Standard feature as the 386SX system above.

Mono 12" Sys. $1635 VGA 640×480 Sys. $2015 Super VGA 1024×768 Sys. $2165



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- **ALPS** switch, adopting click, tactile feeling. The highest cost, the best quality, the most comfortable feeling you can enjoy.
- Double shoot keycaps and keyswitch to guarantee **TEN MILLION** times typing.
- Special offer of "2 set of 12 function keys" on upper and left position to increase typing efficiency.
- 8 direction arrow keys for choice to move cursor 12 kind of speed.
- Build in a **CALCULATOR** and offer keyboard/calculator switch to choose function you need.
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- Offer an extra **MACRO** key.
- Extra "✱ " key for software copy operation (✱ . ✱).

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Logos platinum VGA 16 bit 1024×768 card gives you compatibility and performance that no other can match.

- 100% compatibility with the **IBM** compatible mother board.
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- Supports a wide rang of monitor:
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  - **PS/2** monitors
  - **VGA, EGA, CGA, MDA** & **HERCULES** monitors
- Fully supports:
  - All **IBM VGA** modes to the register level
  - **IBM EGA, CGA** and **MDA** modes to the register level
  - 80-column text modes in 30, 43 and 60 rows
  - 132-column text modes in 25, 30, 43 and 60 rows
  - Including numbers of the popular extended drivers
  - High-resolution graphics display includes:
    640×480 256 colors
    800×600 256 colors
    1024×768 256 colors

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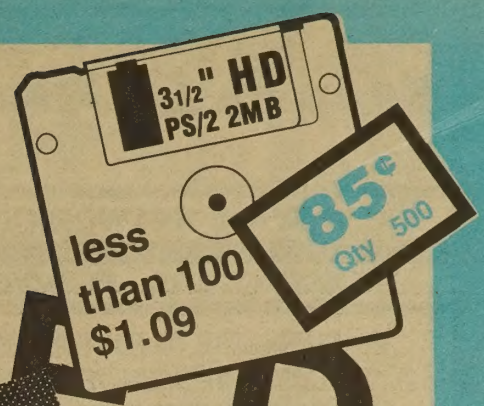

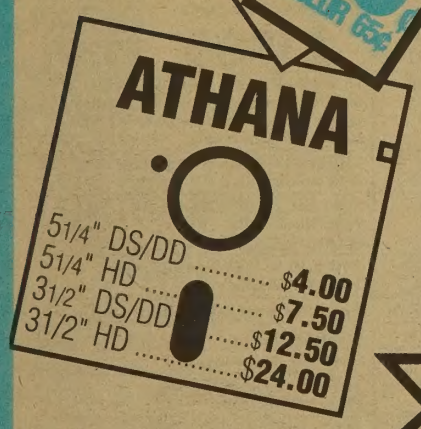

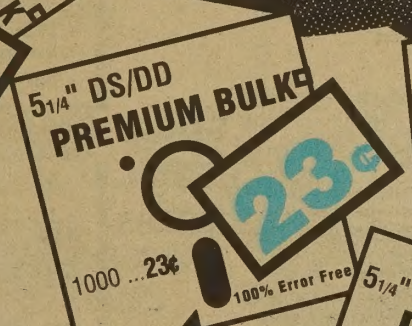

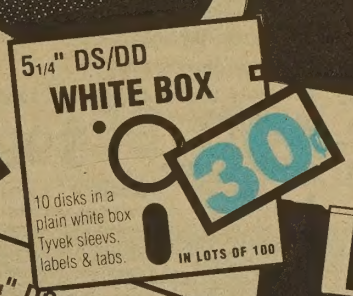

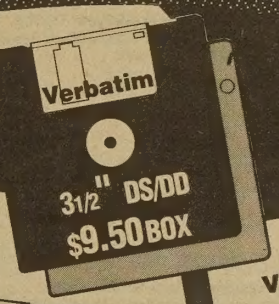

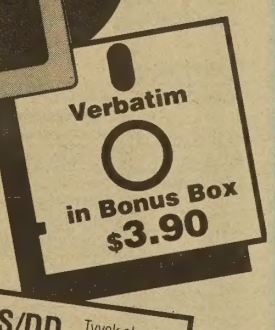

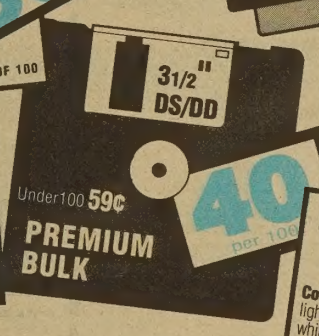

5 1/4" DS/DD
Tyvek sleeves, labels & tabs.
COLOR
Colors Availble: light blue, white, lavander, gray, red, brown, green, yellow, blue, orange, med, dark blue, maron magenta, rainbow pack.
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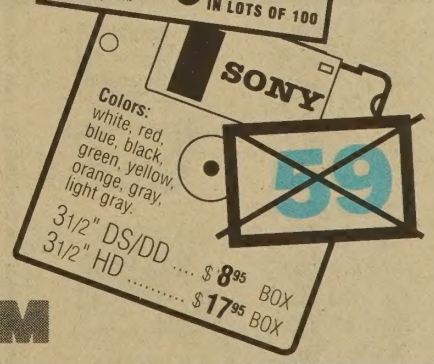

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5 1/4" DS/DD	$4.95 BOX
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5 1/4" HD	10.95 BOX
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Computer Cables (Parallel, Serial, etc.)	$7.95
Power Surge Control (UL)	$8.95
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5 1/4" Diskholder holds over 140 diskettes	$10.95
5 1/4" Diskholder holds over 100 diskettes	$8.95
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5 1/4" Smokey Deluxe Library Case holds 10 diskettes	$1.50
3 1/2" Diskholder holds over 50 diskettes	$9.50
3 1/2" Diskholder holds over 80 diskettes	$10.95
3 1/2" Deluxe Library Case holds over 20 diskettes Perfect Data	$14.95
3 1/2" Smokey Deluxe Library Case holds 10 diskettes	$1.50
Head Cleaning Kit for disk drives (3 1/2" or 5 1/4")	$3.95
Data Switch Box ABC-$25, ABCD-	$35
Keyboard Drawer Wooden-$39.95, Grey Metal-	$29.95
Keyboard Drawer Under Table	$24.95

3M

DC-2000	$16.95
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EXTRAS

Paper Sleeves	2¢
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Qty Prices CALL

Prices are for minimum **100** diskettes. All diskettes are **101%** error free.

Shipping: 1st 100 diskettes, **$3.00**, each additional 100, **$1.00** — UPS, COD, Add **$2.75**

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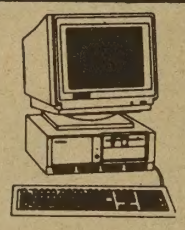
GoldStar GS100 8088-10



Entry-Level System
IBM PC/XT Compatible

Features

- Second-generation system features:
  Low power consumption (87W), high reliability; Small footprint motherboard; Dual floppy disk controllers; Speed selectable by keyboard or DIP switches
- Front panel power and reset switches
- MS-DOS 3.3 and GW-BASIC
- 101-key enhanced keyboard
- 24-Hr testing of motherboard and system at elevated temperature

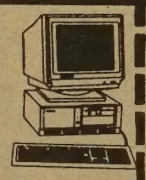
$495

SUGG. RETAIL $995

Specifications

Motherboard	8088 - 1 CPU; 10 or 4.77MHz; Socket for 8087; Dual floppy controller; One serial and one parallel port; Real time clock with battery back-up
RAM	640KBytes standard
Disk Storage	Space for 2 H/H 5.25" devices; FDD: Standard one 5.25" 360KByte drive; HDD: Optional
Video	MONOCHROME CARD
Expansion Slots	Four slots
Power Supply	87 Watts, 115V
Keyboard	101 key keyboard
System Software	MS-DOS 3.3/GW-BASIC; Phoenix ROM BIOS
Dimensions	14.5" x 15.4" x 5.3" (WxDxH)
MONITOR	12" HI-RES AMBER MONITOR

GoldStar GS230



Features **80286-16**

- Small footprint system features:
  Dual floppy disk controllers; Three 16-bit and two 8-bit slots; 130W power supply (low power consumption and high reliability); One serial and one parallel port; 1MB memory standard - expandable to 5MB
- Two 5.25" and one 3.5" half-height slots available; HDC LED and power/speed LED
- Front panel power, reset and key-lock switches
- MS-DOS 3.3 and GW-BASIC; LIM-EMS 4.0 support; Shadow RAM for BIOS and video ROM to improve system performance; OS/2 support
- Novell certification
- 24-Hr testing of motherboard and system at elevated temperature

$995

SUGG. RETAIL $2495

Specifications

Motherboard	80286-16 CPU; 16 or 8MHz; Socket for 80287; Dual floppy controller; One serial and one parallel port; Real time clock with battery back-up
RAM	1MBytes standard; Expandable 5MByte on board
Disk Storage	Space for two H/H 5.25" and 1 H/H 3.5" devices; FDD: Standard one 5.25" 1.2MByte drive; 20 Meg Hard Drive
Video	MONOCHROME CARD/12" MONITOR
Expansion Slots	Five slots (three 16-bit and two 8-bit)
Power Supply	130 Watts, 115V
Keyboard	101 key keyboard
System Software	MS-DOS 3.3/GW-BASIC; Phoenix ROM BIOS
Dimensions	15.0" x 15.0" x 6.0" (WxDxH)

GoldStar GS310

80386SX-16

Features

- Small footprint system features:
  Dual floppy disk controllers; Three 16-bit slots; 1 MB of RAM, expandable to 8MB; VGA built-in; One Serial, one Parallel and one Mouse port; 145W power supply
- MS-DOS 4.01 and GW-BASIC
- Space for three half-height storage devices
- 24-Hr testing of motherboard and system at elevated temperature
- One 3.5" 1.44MB Floppy Disk Drive

$1895

SUGG. RETAIL $3295

Specifications

Motherboard	80386SX-16 CPU; 16 or 8MHz; Socket for 80387SX; Dual floppy controller; One serial, one parallel and one mouse port; Real time clock with battery backup
RAM	1MB of RAM standard; Expandable up to 8MB on board
Disk Storage	Space for three H/H 3.5" devices; FDD: Standard 3.5" 1.44MB 80 MEG HARD DRIVE
Video	Built in 16-bit VGA compatible with 14" VGA W/SWIVEL + TILT
Expansion Slots	Three slots (three 16-bit slots)
Power Supply	114 Watts, 115V
Keyboard	PS/2 type: 101 key keyboard
System Software	MS-DOS 4.01 & GW-BASIC; Phoenix ROM BIOS
Dimensions	14.9" x 15.9" x 3.94" (WxDxH)

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80286-12

BEST BUY!

Intel 80286 Chip
0 Wait State
One Meg of Ram
Expandable to 4MB on Motherboard
1.2 Meg Floppy Drive
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20 Meg Hard Drive
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Serial, Parallel, Clock
Enhanced 101 Keyboard
Desktop Case w/Turbo and Reset Buttons
One Year Limited Warranty Parts & Labor

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80386SX-16

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Intel 80386SX Chip
One Meg of Ram
Expandable to 8MB on Motherboard
1.2 Meg Floppy Drive
Medium Tower Case
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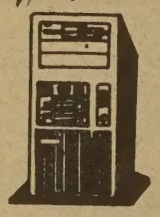
Enhanced 101 Keyboard
One Year Limited Warranty Parts & Labor
Monochrome $1495



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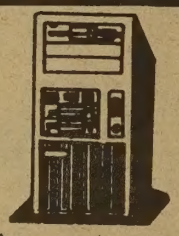
80386SX

80386- 25



0 WAIT STATE
Intel 80386-25 Chip
Two Meg of Ram
Expandable to 8MB on Motherboard
Hard and Floppy Controller
1.2 Meg Floppy Drive or 3½" 1.44
Medium Size Tower Case
65 Meg Hard Drive
16 Bit VGA Card
14" VGA Monitor w/Swivel & Tilt
Enhanced 101 Keyboard
2 Serial, Parallel, Clock
One Year Limited Warranty Parts & Labor

$2395

80386-33

0 WAIT STATE
32K Cache
386-33
Phoenix BIOS
Intel 80386-33 MHz Chip
Two Meg of Ram
Expandable to 16 MB on Motherboard
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Hard and Floppy Controller
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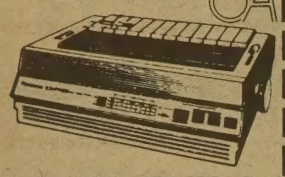

- 192 CPS draft/63 CPS LQ
- 16.5″ carriage, 13.6″ print line
- 5 resident LQ fonts
- 4 multiple paper feed paths
- Auto load & paper parking
- Epson & IBM Compatible
- 2 year limited warranty

Sugg. List $499

$189 w/Cable

KXP1124

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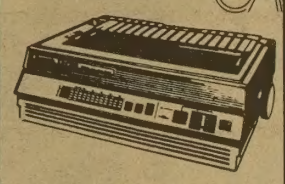

- 192 CPS draft/38 CPS LQ
- 4 built-in NLQ fonts
- Rear, top, bottom paper feed
- Auto load & paper parking
- 2 year limited warranty

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$299 w/Cable

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KXP1624

Panasonic Office Automation OA

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- 5 resident LQ fonts
- 4 paper feed paths
- Push pull/tractor & friction feed
- Auto load & paper parking
- Epson & IBM Compatible
- 2 year limited warranty

$459 w/Cable **Sugg. List $699**

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Panasonic Office Automation OA

Laser Printer

- Business, Word Processing, Desktop Publishing
- Prints 11 PPM, 500 sheet capacity
- 11 resident portrait & landscape fonts
- 300 DPI resolution
- Five popular emulations
- 512K RAM expandable to 1.5 MB
- 1 year limited warranty

$1395 w/Cable & Toner

KX-P4420

Panasonic Office Automation OA

Laser Printer

- Business, Word Processing, Desktop Publishing
- Prints 8 PPM, 250 sheet capacity
- 11 resident portrait & landscape fonts
- 300 DPI resolution
- Five popular emulations
- 512K RAM expandable to 1.5 MB
- 1 year limited warranty

$1095 w/cable & toner

CITIZEN GSX-140

THE PRINTER WITH SIMPLE ENGLISH PROMPTS

Superior 24-wire print quality

CITIZEN Color On Command

$379 w/Color Option & Cable

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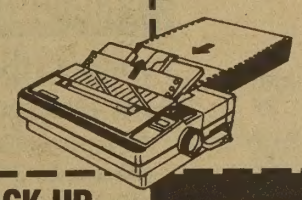


NEW NEW

CITIZEN GX-200

THE PRINTER WITH SIMPLE ENGLISH PROMPTS

Superior 9 wire print quality

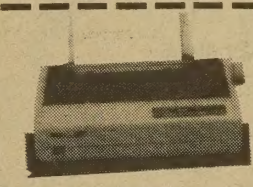
$199 w/Cable

$279 w/Color Option & Cable

CITIZEN Color On Command

star micronics

$179 w/cable



NX1000II

- 180 CPS draft/45 CPS NLQ
- 9 Pin Dot Matrix
- 4 NLQ fonts
- Paper Parking
- IBM/Epson compatibility
- Friction/push tractor feed

HARD DISK DRIVES

5.25″ Half-Height Drives

ST225—21.4M 65MS hard drive, MFM recording method

ST238R—32.7M 65MS hard drive, RLL recording method

ST2511—42.8M 28MS hard drive, MFM recording method

5.25″ Full-Height Drives

CDC 70MB 28MS MFM

PTI Model #351
65 Meg Drive
3.5″ 38MS

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- Up to 120 MB capacity
- Fast 40 MB in under 11½ minutes
- QIC-40 interchange standard
- Floppy Interchange

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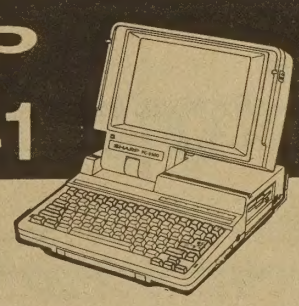
SHARP PC-5541



- Intel 80286-12
- Runs 6/8/12 MHz
- 640KB Internal RAM Exp 3MB
- 1.44 Floppy Drive
- 40 Meg 3.5″ Winchester Drive
- VGA Display Card 640x480
- Illuminated Double Supertwist liquid crystal display
- Serial, Parallel, Clock

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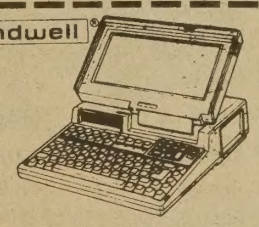

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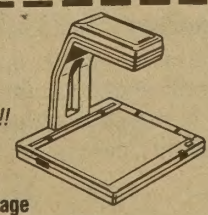

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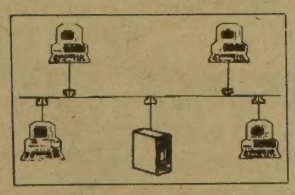

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This month's cover story features an interview with Peter Norton, whose famous Utilities have been the salvation of many a DOS file. Norton has recently moved into both the Mac and UNIX universes, and he has some interesting things to say about the respective roles of UNIX and OS/2 in the business world of the next few years.

Artistically oriented readers will be interested in the saga of Heidi Turnipseed, featured in our Creative Tools section. Heidi, a Disney animator, has used an Amiga to help her realize her dream of her own independent studio.

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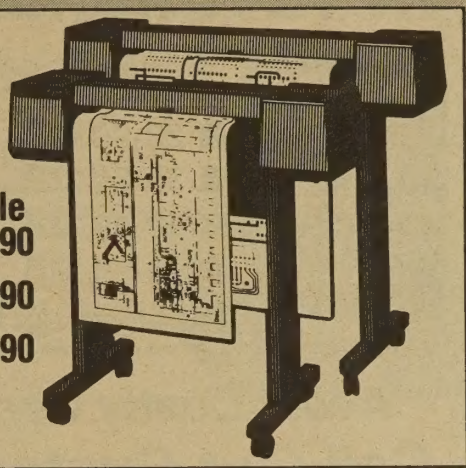

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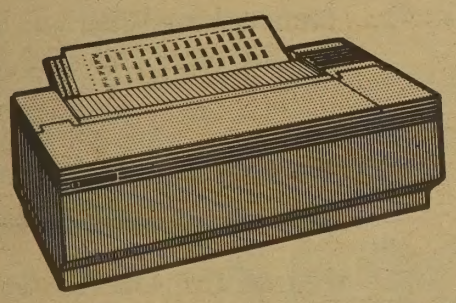

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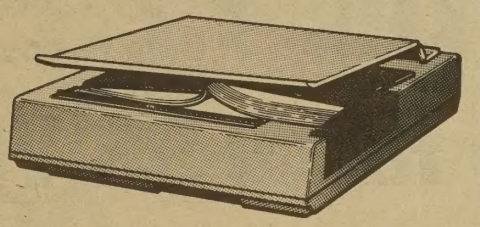

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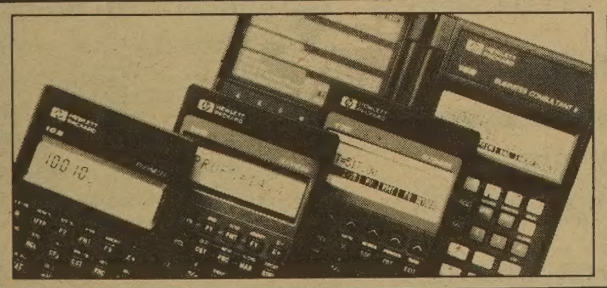

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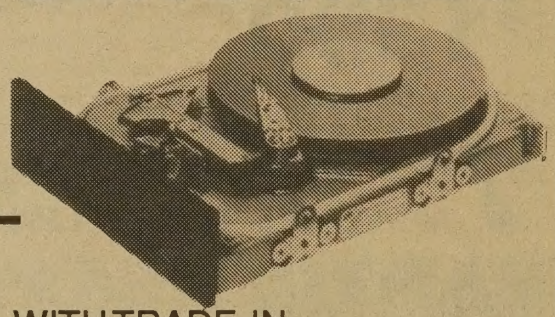

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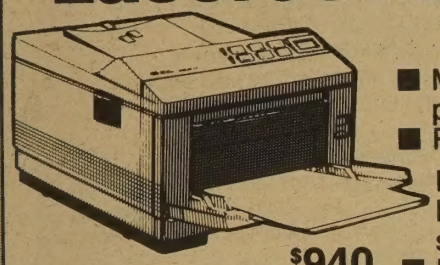

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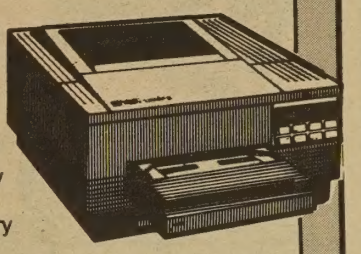

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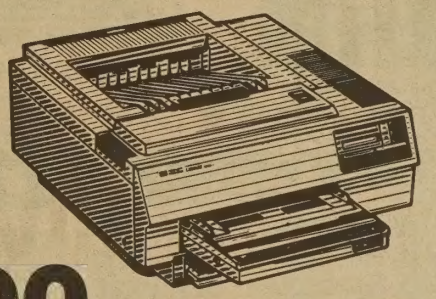

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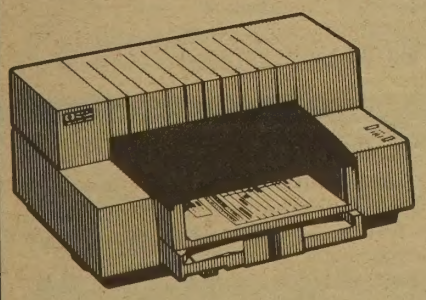

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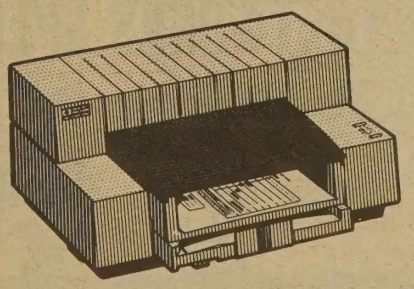

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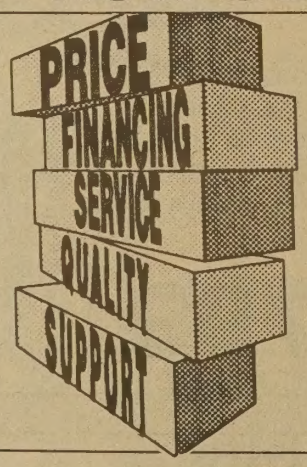

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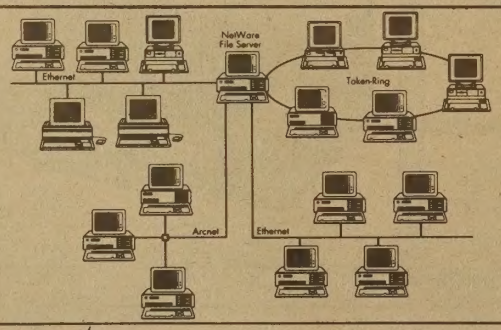

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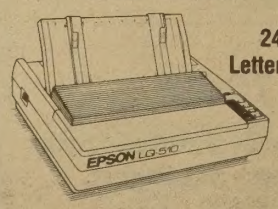

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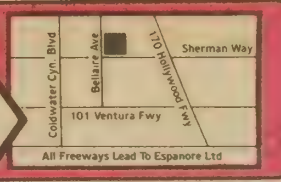

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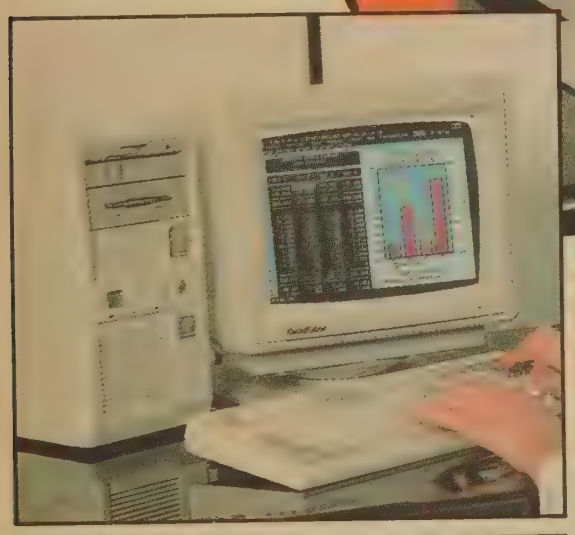

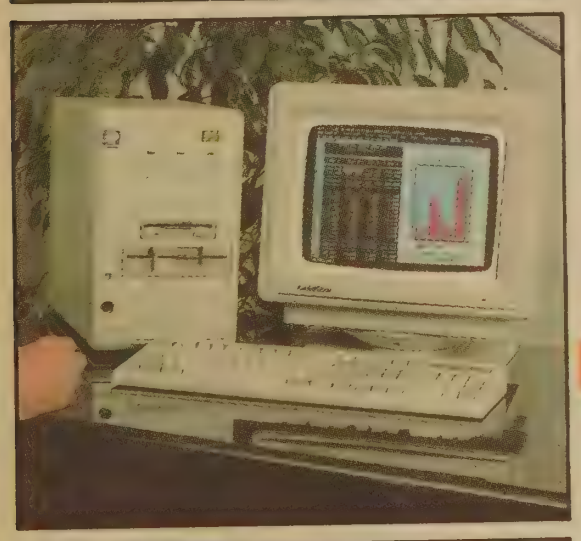

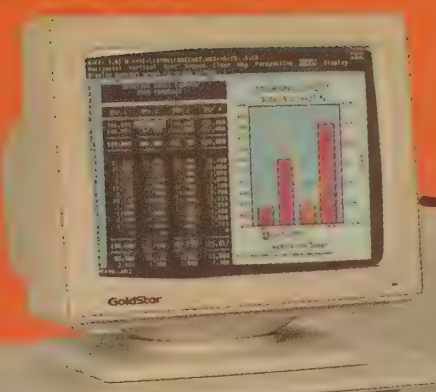

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INDUSTRY INSIGHT

BY PAUL HOFFMAN

JUDGE DROPS XEROX SUIT AGAINST APPLE

In one of the quickest resolutions to a computer lawsuit, federal district judge Vaughn Walker dismissed all six charges that Xerox made against Apple in its recent lawsuit. The judge had dropped five of the six counts in March, and dropped the sixth in May.

The lawsuit, filed December 14, 1989, alleged that Apple's Lisa and Macintosh copyrights should be cancelled because they incorporated material from the operating system and display software for Xerox's Star computer. Xerox also claimed that Apple used unfair competition when it claimed that Apple was the sole owner of the copyrights to the look and feel of the Lisa and Macintosh display.

The case rested on Xerox's assertion that Apple had interfered with its ability to license the Star interface. Xerox was unable to show any significant interference to the judge, so he dismissed the charges in summary judgment. Xerox may appeal the decision, although it is unlikely to be heard by a higher court given the judge's finding of lack of merit.

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

ED ESBER OUT AS ASHTON-TATE CEO

Ashton-Tate, maker of dBASE IV and other products, has been loping along at a slow pace in the last few years. Other database manufacturers have had no problem coming out with programs that are easier to use and faster than dBASE IV. Persistent bugs in dBASE IV have not been fixed a year after the product was released, and none of Ashton-Tate's other software products has been well received.

In the wake of these failures, Ed Esber, chief executive officer, chairman of the board, and president, resigned his offices and took the lesser job of vice chairman of the board. He had held the offices for five years. Esber is replaced by William Lyons, formerly vice president of the applications group.

Esber's failures were compounded by his inability to find good top-level help. He readily acknowledged that he was not very technical and that he did not have many program management skills. Unfortunately, he was not able to find others who had these important skills. Industry watchers felt that Lyons, a former IBM executive, would be able to surround himself with better managers.

INTEL SUES AMD FOR USE OF 80286 MICROCODE

Ah, lawyers.

Intel is again trying to harass AMD out of the microprocessor market by suing AMD over an agreement that was signed almost 15 years ago. AMD recently told Intel that it intends to use the microcode that Intel developed for the 80287 math coprocessor in AMD's own part, called the 80C287. AMD has the right to do this under a 1976 agreement between the two companies, according to AMD.

AMD's plans to make an 80287 clone have been common knowledge for more than a year. In April, AMD told Intel that they were about to start making the 80C287 part and that they would mark it with Intel's copyright since Intel wrote the microcode. Intel turned around and sued AMD and asked for an injunction against AMD, as well as damages.

The agreement between the two companies states that Intel gives AMD a royalty-free

NORTON UTILITIES MOVE TO UNIX

Peter Norton, famous for his do-all utilities for the IBM PC, announced that he will be porting the functionality of his utilities to various UNIX systems in the near future.

Norton said that the utilities will perform standard maintenance functions, such as changing directories through an interactive tree, and use some advanced features, such as undeleting files. He noted that not all features available on the PC would translate to all versions of UNIX, but he said that it was likely that many of the disaster-recovery programs could be at least partially implemented. Norton Utilities for UNIX are now available for Interactive System Corporation's V/386 and will be available soon for other 80286- and 80386-based UNIXes, as well as UNIX for Sun and Hewlett-Packard computers.

Norton noted that not all features available on the PC would translate to all versions of UNIX, but he said it was likely that many of the disaster-recovery programs could be at least partially implemented.

Norton also admitted that its Norton Utilities for Macintosh program had significantly missed its ship date due to program and packaging problems.

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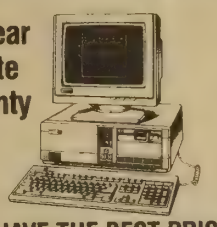

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license to all Intel copyrights, permitting AMD to copies of the microcode contained in Intel microprocessors. Now Intel claims that the copies that AMD can make can only be used at AMD, not distributed to other people. Intel says that the agreement was made for AMD as a customer of Intel, not as a competitor. However, AMD has used the agreement to compete with Intel before without a problem. Intel is trying to forestall AMD from getting the rights to copy the 80386, which is also covered under the agreement.

Intel is clearly trying to get out of the agreement, which runs through 1995. By keeping AMD in court, Intel is keeping its rival out of the marketplace. The original agreement, renewed in 1982, was written to give Intel's customers assurances that there would be more than one source for Intel CPUs. Now that Intel is large enough to produce chips almost as fast as the market demands, it doesn't want the competition, so it is trying to keep AMD out of the market.

Many PC manufacturers complain that the 80386 is in short supply and, even if it weren't, it is grossly overpriced. If AMD were in the market, the price of the 80386 would certainly drop. This is, of course, also true of the 80287. A surprisingly small number of 80286 users have added 80287s to their systems, even though many use spreadsheets that could benefit from them. AMD could make these chips easier to obtain by dropping the prices.

Many PC manufacturers complain that the 80386 is in short supply and, even if it weren't, it is grossly overpriced. AMD could make these chips easier to obtain by dropping the prices.

MICROCOMPUTER VENDORS DISAGREE WITH CHIP MAKERS OVER JAPAN SANCTIONS

Major groups of computer manufacturers have sent letters to US Trade Representative Carla Hills, asking her to ignore the efforts of the Semiconductor Industry Association (SIA) to punish Japan for dumping DRAM chips in the US.

The manufacturing groups have separately told US officials that any repercussions against the Japanese would make the current situation worse and that higher memory prices would make it much harder to sell computers.

In recent months, Japan has made efforts to open up many of its industry and consumer markets to American goods, although no one expects the trade imbalance to shrink significantly any time soon. The computer manufacturers are hoping that when the current semiconductor agreement expires next year, memory prices will stabilize at their current low rates and continue to fall so that users will buy more powerful machines.

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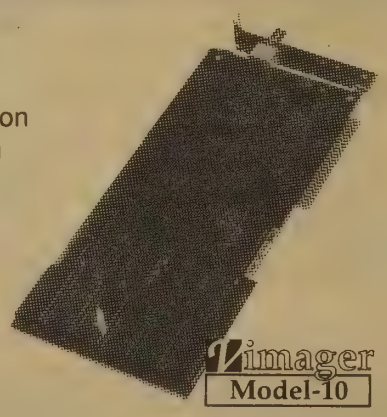

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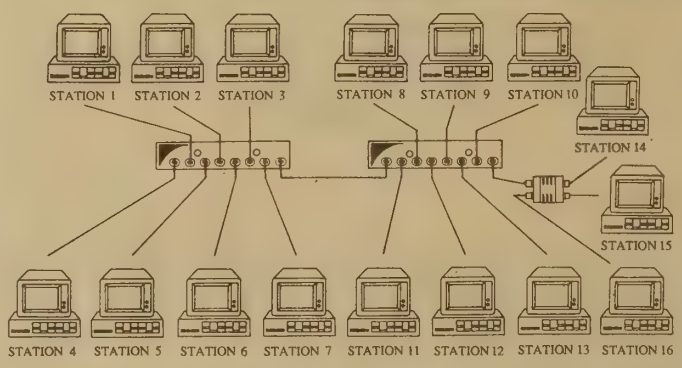

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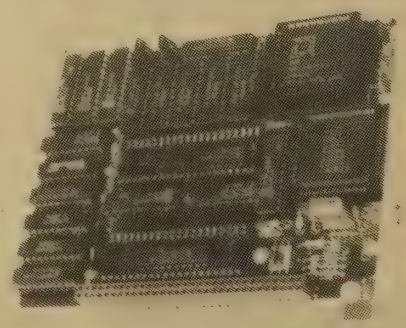

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THE COMPUTER INDUSTRY AFTER EARTH DAY

Smugness often sets in after a self-congratulatory event like Earth Day. We convince ourselves that we are indeed doing lots of things to help heal the earth. Yet most of us do lots of damage every day as we work.

The computer industry has done little to help reverse the problems that other industries have caused. In fact, many parts of the computer industry are major sources of groundwater and air pollution.

Many computer companies used Earth Day to help direct their employees to think about their environment. For example, Sun had an employee contest and awarded cash prizes for the best ideas of how Sun could help the environment. Winning suggestions included

The fondly held image of the paperless office has lulled many into thinking that micros have reduced waste in the workplace. However, studies show that companies that use computers generate more paper than those that do not.

paper and plastic reduction, programs that help environmental planners, and so on. Other companies sponsored talks in workgroups about reducing trash and using more renewable resources.

Individual computer users may look at their micros as non-polluting. The fondly held image of the paperless office has lulled many into thinking that micros have reduced waste in the workplace. However, studies show that companies that use computers generate more paper than those that do not. Much of that paper is thrown away, not

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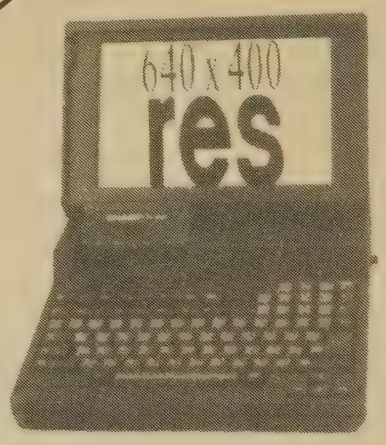

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Since no one does their daily printing on newsprint, many people simply throw out the drafts and photocopies that they produce. Most cities, however, recycle newsprint and mixed paper. Although mixed paper does not bring as much money, it is a growing business for many recyclers. The paper used by dot-matrix printers and laser printers is considered to be high quality and is therefore sought after by recyclers. Computer paper is separated and recycled into other higher-quality paper products (as compared to items such as color inserts which must be bleached and usually make lower-quality paper). If you are now simply throwing out your unused output, you should look into mixed-paper recycling in your area.

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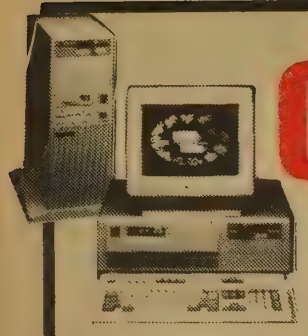
sors now have excellent print preview features that let you see on the screen exactly what will print out, even if you are using many fonts and special formatting. WordPerfect and 1-2-3, by far the most popular programs on the PC, both allow you to see how your output will look without having to print a sample. There are also many utilities on both the PC and Mac which let you preview output for programs that do not have this feature. Heavier reliance on program's print preview features can significantly reduce your paper use.

If you must use paper, you can reduce your paper use by printing in a smaller type size. Most people use 12-point type, which is much larger than standard magazines or books. Simply reducing the type size of your documents can save a great deal of paper.

Most laser printer users only print on

You can reduce your paper use by printer in a smaller type size. Most people use 12-point type, which is much larger than standard magazines or books.

one side of the page, leaving the other side blank. Although computer users rarely need much scratch paper, public schools do. Since most public schools in California are severely underfunded, teachers end up spending money out of their own pockets on supplies, including paper. Standard laser printer and photocopier paper that has only been used on one side can usually be run through a photocopier again. Many teachers use this type of paper for handouts and assignments that they would normally only print on one side anyway. White paper that has been used on one side is also useful for art projects and random scribbling. Donating paper that has been used one one side guarantees that it will be recycled one-for-one and lets the teacher spend resource money on other supplies. ■



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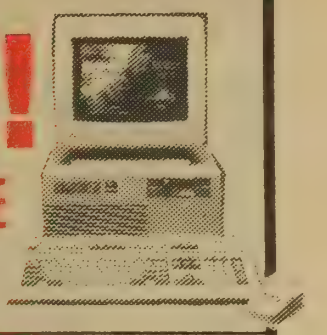

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- 101 Enhanced Keyboard
- Monochrome Graphic Card
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- 386SX-16 MHz MB
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- 1.2MB Floppy Disk Drive
- 40MB Hard Disk (28MS)
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 200W Power Supply
- Baby AT Digital Case
- 101 Enhanced Keyboard
- Monochrome Graphic Card
- 12″ Monochrome Monitor

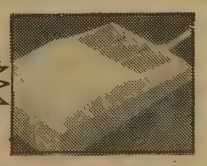
$1195

IC 286-12 MHz 40 MB

- 286-12 MHz MB
- 512K Memory on Board (Expandable to 4MB)
- 1.2MB Floppy Disk Drive
- 40MB Hard Disk (28MS)
- Hard & Floppy Controller (1:1 Interleave)
- 2 Serial, 1 Parallel, 1 Game Port
- 200W Power Supply
- Baby AT Digital Case
- 101 Enhanced Keyboard
- Monochrome Graphic Card
- 12″ Monochrome Monitor

$899

FREE!!!



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286-12 MHz MB (0K)
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Mitsubishi 1429 (640x480, VGA)	$419
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LETTERS

VGA MONITORS: APPLES AND ORANGES

Thank you very much for your kind review of the Relisys 15" model 1520 super VGA color monitor in the article "Shopping For VGA" by Jim Meyer and Dan Burleson (issue #69). Although the review is fair, one important point was left out. The Relisys monitor is non-interlaced and the other monitors are interlaced, and that should have been noted.

To compare these monitors is like comparing apples with oranges. Your readers may be left with the wrong information regarding both performance and price. Interlaced monitors have a very slow refresh rate of 43 times per second. Non-interlaced monitors, on the other hand, have a refresh rate of 60 times per second. When the refresh rate is slowed, the monitor does not have to be as powerful; thus the cost is lower for interlaced monitors. And yet the Relisys monitor is attractive at half the price of its non-interlaced brethren.

"Non-interlaced monitors have a refresh rate of 60 times per second. When the refresh rate is slowed, the monitor does not have to be as powerful; thus the cost is lower for interlaced monitors."

Amnon Rosen
Director, Sales and Marketing
Relisys

DATABASES: ANOTHER VIEW

I just read "Choosing The Right Database For Your Business" (#68). I can't believe you would publish an article with so much misinformation and such an illogical conclusion.

The most famous flat-file database, the one that's been around the longest and is still a best-seller, was not even mentioned. [Software Publishing's] Professional File started out as PFS File and PFS Report for the Apple II ten years ago.

Relational databases organize data by tables, flat-file databases do not.

PC-File and PC-File DB were discussed as two separate products, even though they are now combined into one product, PC-File 5.0.

The conclusion was that the obvious decision is to choose dbase (sic). Dbase is near the bottom of most product reviews. Recently, *InfoWorld* magazine ranked Dbase II eighth and Dbase IV seventh of eight leading relational databases. Number one was [Borland's] Paradox, a product not even discussed in the article.

Robert J. Morrisette
San Jose

The article in question was concept-and-example oriented and made no claims to be exhaustive. However, we certainly meant no slight to any products, including the much-praised Paradox.

Ashton-Tate is surely having its troubles (see Industry Insight section), but dBASE has a formidable installed base and is unlikely to disappear as a standard any time soon.

As for the spelling, Ashton-Tate spells it dBASE....—eds.

INTERNATIONAL CONNECTIONS

I happened to come across your esteemed magazine from one of the computer users' groups in Singapore.

I am a sales executive with Harasani Computer Systems, based in Singapore, which exports high-quality and low-cost computer parts, accessories, peripherals and microcomputers manufactured in Singapore to the world at competitive prices.

As Singapore is also well-known as "hard disk city" and due to its strategic location between East and West, we are able to supply all types of hard disks, RAM chips and printers, among other things, at prices lower than those in the US. Most (80 percent) of the world's supply of hard disks are manufactured and available in Singapore. Singapore also has one of the finest distributions channels and transport systems in the world.

We would like to establish contact with computer users' groups in America who intend to import/export microcomputer products or parts from/to Singapore.

We also welcome any enquiries and offers from individuals and organisations. Any enquiries or offers can be addressed or faxed to me.

M.A. Kassim
Sales Executive
Harasani Computer Systems
Blk 201E Tampines Street 23
#04-108 Singapore 1852
Fax: 7844410

DOES MCDONALD'S HAVE THE BEST HAMBURGERS? AN AMIGA LOVER STRIKES BACK

I just wanted to add my comments to Sonny Shrivastava's letter in your April edition.

Mr. Shrivastava's basic position seems to be that "more popular" is better, and he conveniently includes PC users in his support. If he is right and "more" really is better, then he better sell his Mac and go out and buy a PC, because PCs outnumber Macs by a dominating margin. Mac users do their own share of PC bashing, and it is funny to see them include PCs in their arguments when it suits their needs.

The Amiga is a fun computer! I get tremendous enjoyment in creating music, doing animations, sampling sounds, digitizing and modifying art, and other fun things. It truly is the computer for the creative mind and the best home computer you can buy. For businesses, "fun" is probably not on the top of their priority list, but the Amiga can also do word processing, spreadsheets, video, desktop publishing, etc., as well as the best of them.

More is not always better, more popular is not always better. Does McDonald's have the best hamburgers? I do not believe that any Amiga user really believes that Amigas will overtake PCs as the dominant personal computer (but number two would not be bad). For me, the Amiga is just the best com-

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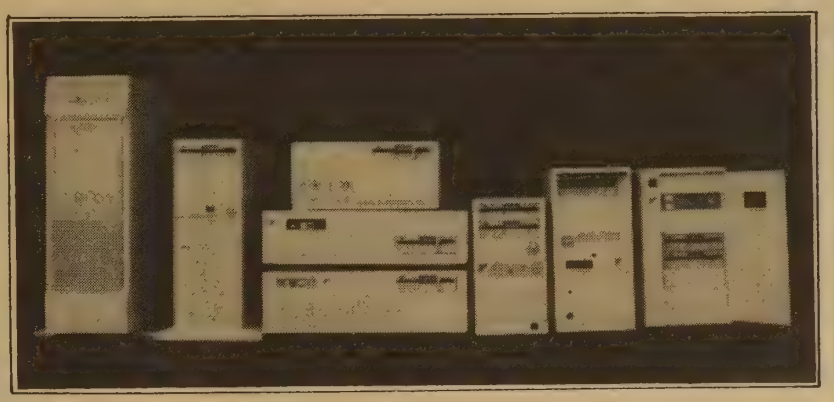
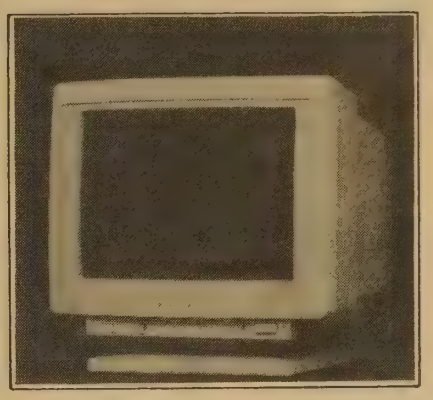


CS-747 CS-15 CS-101 CS-6 CS-10 CS-601 CS-901 CS-30



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Multi-Frequency Monitor
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Micronics 386 25MHz M/B w/64K Cache	$1395.00
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Essence Baby 33MHz M/B w/32K Cache	$1135.00
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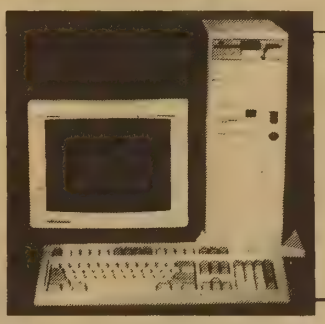

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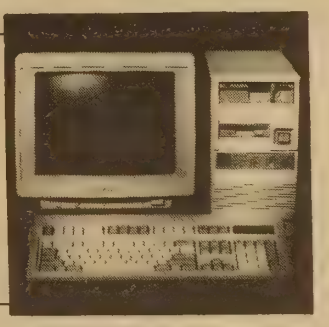

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Focus 2001 101 Keys Keyboard w/Hard Dustcover (Click)	$48.00
Focus 3001 101 Keys Keyboard w/Calculator (Click)	$65.00
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Panasonic KX-P1624 Printer (24pin/182cps/132col)	$425.00
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65MB (25ms)	+$370.00
80MB (25ms)	+$455.00
100MB (25ms)	+$535.00
120MB (15ms)	+$625.00
150MB (17ms)	+$840.00
200MB (25ms)	+$905.00
300MB (18ms)	+$1625.00

Monitor + Video Upgrade:

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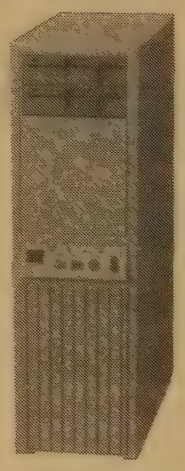
Standard AT Case With 200 Watt Power

$2590



Tower Case
Add $90

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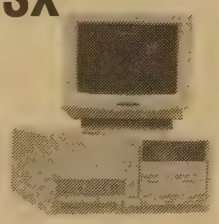
60 MB	2050	2395	2590	2345	2690	2885	2750	3095	3290
80 MB	2250	2595	2790	2545	2890	3085	2950	3295	3490
150 MB ESDI	2640	2985	3180	2935	3280	3475	3340	3685	3880

16 MHz 386 SX



1MB Memory
40 MB Hard Drive
1.2 MB Floppy Drive
1-1 HD/FD Controller
Paradise 16 Bit VGA Card
Relisys VGA Monitor
I/O Card
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16 MHz 286

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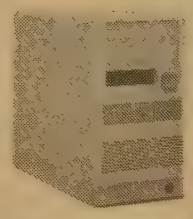

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"Does McDonald's have the best hamburgers? I do not believe that any Amiga user really believes that Amigas will overtake PCs as the dominant personal computer. For me, the Amiga is just the best computer around at any price—period."

puter around at any price—period. And you can always add the PC bridgeboard and/or A-Max hardware and have the best of all three worlds.

Douglas J. Nakakihara
Simi Valley

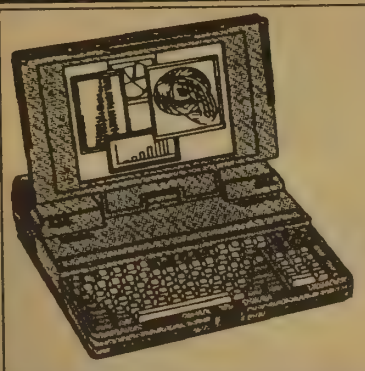
Beyond Religious Wars

Obviously Mr. Shrivastava is very sour about his experiences. I'm sorry. What is a pity is that this seems to have resulted in an evangelical need to convince all potential buyers of their folly in considering such an evil machine. I believe such a goal to be very harmful, because it is quite obvious that there *are* a lot of very happy Amiga users out here in the real world.

Any prospective buyer of a computer should carefully consider, as best they can, what they intend to use it for. And then investigate for *themselves* all the possible machines on that basis. A few days ago I spent a very interesting half hour talking to artist Pepe Moreno, whos graphic novel *Digital Justice* has just been published. He uses a Mac II for his work—and needs it, because of the demands of published art—but when someone asked him whether they should buy an IBM, Mac, or Amiga, he unhesitatingly recommended the latter as more flexible for this person's purposes. (I don't think I need repeat his opinion of IBM!)

So thank you, *MicroTimes*, for your continuing coverage of a wide range of machines. Keep it up, and let's put this silliness to rest.

Pete Goodeve
Berkeley



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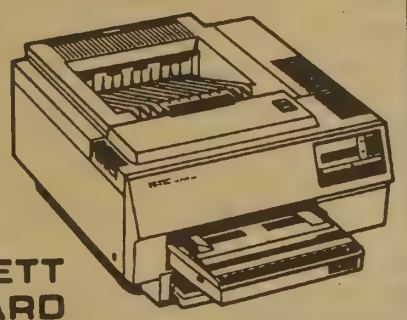

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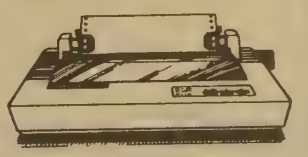

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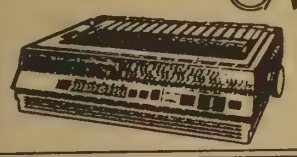

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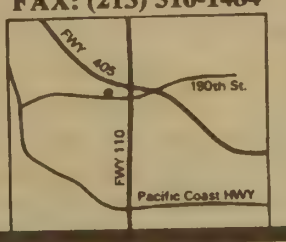

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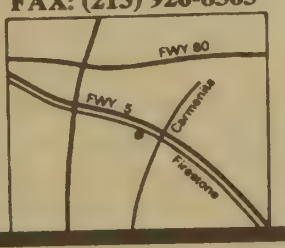

Fair Profits For Programmers, Amiable ATMs & Fruitful Fiction

BY JIM WARREN

Innovative programmers often have a problem: They are usually not equally talented in business.

Many programmers have some great product ideas, and the ability to implement them. Many are willing to make the all-consuming investment of time, talent and energy needed to implement valuable creations.

Many would accept subsistence-level income while creating their products—*If* they could retain ownership, or at least reap a significant percentage of the profits from their creations.

However, to reap substantial rewards from their innovation, they usually must build all the financial and business structures to manufacture, promote, market, distribute and support their products. Most programmers are not trained, or experienced, or inclined to deal well with "the suits," the "vulture capitalists," the marketroids, and the endless hassles of creating and running a business. Nor is such effort a productive use of software wizards' time and energies.

Sadly, most technical innovators end up continuing to accept wage-slaves' simple salaries, and perhaps some small stock options, while originating products of great value for their employing corporations, which take the vast majority of the profits of the innovators' creativity.

On the company and manager side of the issue, there are employee problems related to burn-out, one-shot innovation, seniority, escalating benefits, managing creative talent, etc..

REALIZABLE FANTASIES

Copyright © 1990 by Jim Warren. All rights reserved. *Jim Warren founded* InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and the nation's largest public microcomputer convention. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding President of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

LET'S HAVE PROGRAMMERS' AGENTS AND A SOFTWARE WRITERS' GUILD

Bob D'Orazio of Scotts Valley came to me with a fascinating proposal. Let's create a Software Writers' Guild, modelled somewhat after the Screen Writers' Guild. I think Programmers' Agents could be even more useful. Consider the analogies between computer programmers and screenwriters in the more mature movie and TV industry:

Screenwriters often operate as independent authors. They receive significant percentages of the profits from their creativity. Proven innovators often receive substantial cash advances to support them while they create new scripts. Screenwriters can usually concentrate on what they do well—originating exciting, valuable creations.

They *don't* usually waste their time rounding up investors (known as "angels"), nor waste time producing the product (done by studios or production companies). They certainly don't waste time marketing and distributing the results of their creativity, other than, perhaps, assisting its promotion by appearing on talk shows, etc.

Further, screenwriters usually don't even hassle with searching for and negotiating with the production companies. That's done by agents, who specialize in search and negotiation, usually working for a percentage of what the writer receives, and talented at optimizing that income. (The book-publishing industry has authors' agents performing similar functions.)

The Screen Writers' Guild jumps in where group effort is needed by these otherwise-independent artists, e.g. concerning contractual and legislative issues affecting screenwriters' interests.

This proposal seems eminently worth pursuing; our industry is mature enough for it. Call Bob at (408)439-8556 and discuss it with him. (Note: If I remember correctly, the movie organization is actually called SWAG — the Screen Writers & Actors Guild.)

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But I'm told that with some banks one must endure a float of at least a day to electronically transfer funds from one account with one financial institution into another account in another financial institution (*e.g.* a chargecard), even when it can all be accomplished via a single ATM.

Sez Oakland's Mary Eisenhart, ATMs that already perform electronic funds transfers for multiple institutions should facilitate such transfers without forcing delays while loot floats through intermediate accounts. Sez I—*Yup!*, just a "simple matter of programming."

SOUND FAMILIAR?

"I have too much to do"—so I don't read much fiction any more; just technoid stuff, plus usually infuriating political news.

But as a Child Nerd, I read fiction and nonfiction—lots of it. (In 1950s Texas, one *needed* escape literature.) Then came the frenetic, idealistic chaotic hippie '60s in the San Francisco Bay area (actively shared by an amazing number of people who later became leaders

Most programmers are not trained, or experienced, or inclined to deal well with "the suits," the "vulture capitalists," the marketroids, and the endless additional hassles of creating and running a business. Nor is such effort a productive use of software wizards' time and energies.

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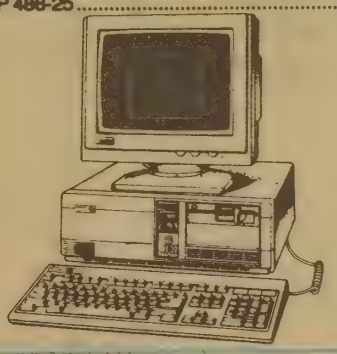

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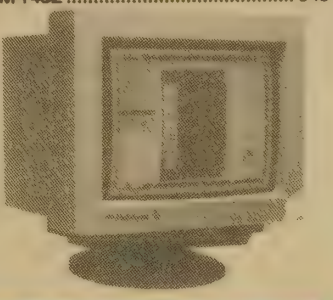

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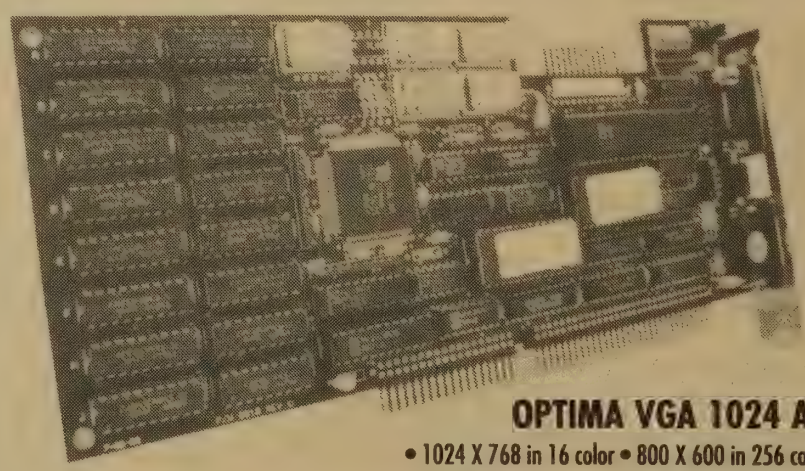

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and major innovators in microcomputing). Fiction became unneeded; daily living far exceeded most folks' wildest fantasies.

Next came the '70s when so many of us "Got Busy"—turning fantasies of Then into realities of Now. Again, "I didn't have time" to read nonessentials.

But we have a housemate, a journalist who still reads Stuff. I mean even optional Stuff. Amazing, huh? He keeps passin' books along, an' I keep politely thanking him. Well, recently, I picked up one that had taken up multi-month residence on the dining room table.

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It prompted this digression from "specific futures"—for it deals with how we dream up the futures we create. "In the beginning . . ."

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It's *Zen & The Art Of The Macintosh*, by Michael Green (Running Press, Philadelphia). But, it *ain't* your run-of-the-mill tech-nerd monograph.

Its graphic format is wildly different from most books—and entirely produced on elderly Macs. Green's not a computer pro; he's a book illustrator—an artist.

He communicates effectively and efficiently, while violating naive "rules" for "proper" content and "good" form. The graphics he created with Model-T Macs are, by themselves, worth studying.

But the book's greatest value is his well-expressed and uniquely-illustrated insights into creativity, and how we can productively juxtapose our most creative processes—inherently undisciplined—with the "need to get something done."

Green illustrated how his mind worked as he created the pages. He provided insights into the general creative process. He suggested how to enhance our own creative productivity.

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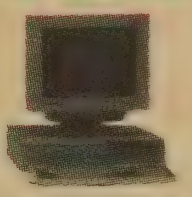

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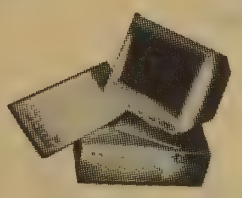

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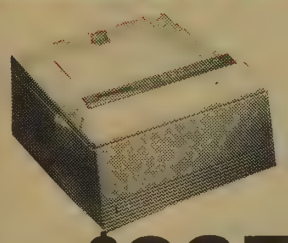

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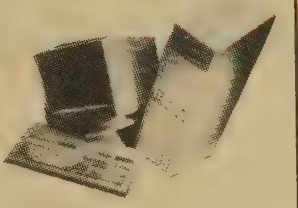

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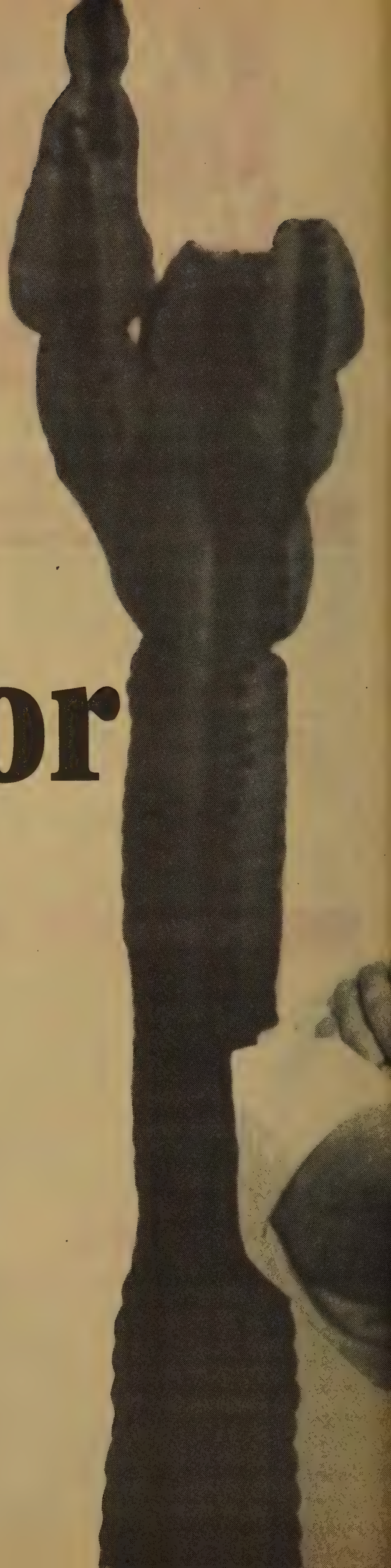
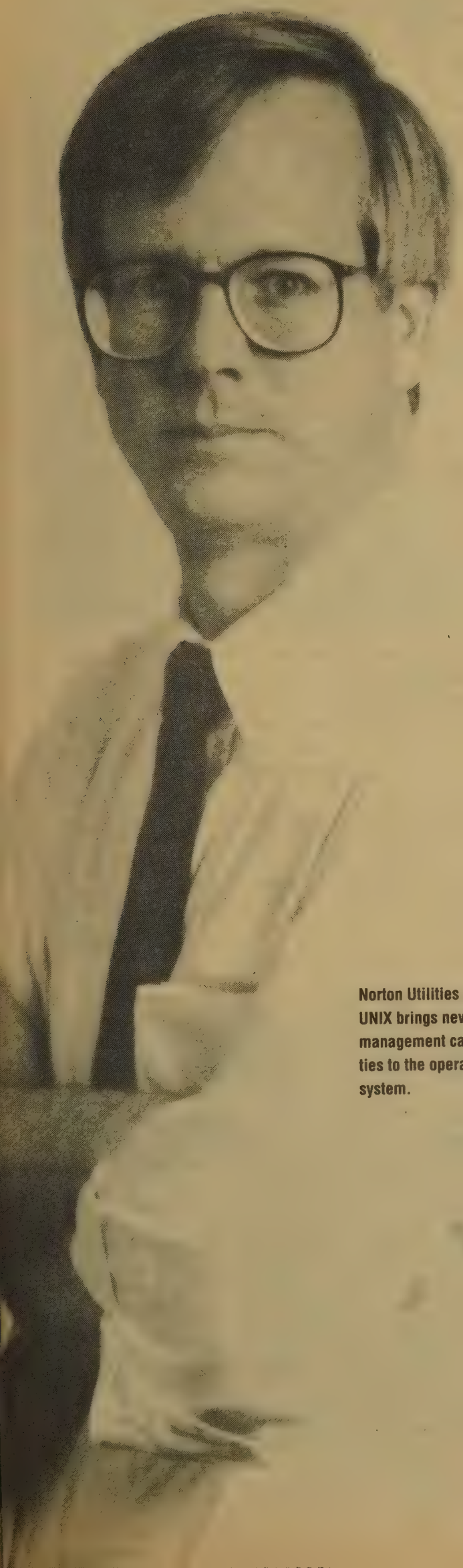
Peter Norton In The Multivendor Office



DOS Pioneer Takes On Mac And UNIX

By Mary Eisenhart
Photo: Michael Jay



Norton Utilities for UNIX brings new file management capabilities to the operating system.

One fateful day shortly after he bought one of the first IBM PCs, Peter Norton accidentally erased a file...

Norton had been working with computers in one form or another since his college days in the '60s. He'd been writing some disk exploration programs for his own amusement and edification (the state of applications for the PC in those days didn't leave you a whole lot of other options), and, he recalls, "I managed to erase one of my source files."

He continues, "I knew enough about the disk structure to know that the data was there, it wasn't obliterated, it was simply inaccessible. The concept at that point was just obvious to me, that I could write a program that would reverse the process of deleting or erasing a file. So I dropped what I was doing and wrote the first UnErase program."

Since his current job assignment was coming to an end, Norton thought it might be interesting to try to make a living selling UnErase and the companion utilities he wrote; he suspected other users might have some use for them. He started Peter Norton Computing in 1982, doing all the work himself, including marketing his products by writing magazine articles and publishing a free newsletter.

"Two things emerged out of that," he says now. "My software company went from being an occupation trying to make a living for one guy into a company that now employs 115 people and will probably do $40 million or more of revenue this year. And the writing turned into a bunch of magazine columns and over a dozen books that are available in 16 languages, including Russian and some of the other Eastern Bloc languages.

"It shows you how odd little accidents can lead to remarkable things in your life."

April 1990 was a noteworthy month for Norton. While the "Software Saint" (so called by users happy at his product's "miraculous" file recovery capabilities) has long been the utility leader in the DOS world with the Norton Utilities (including UnErase), Norton Commander, and Norton Backup, April saw the announcement of Norton's first products for other operating systems: Norton Utilities for the Macintosh and Norton Utilities for UNIX.

And while Mac users rejoiced at the availability of Norton Utilities for their machine,

UPDATE

Norton Computing Joins Symantec

Shortly after *MicroTimes* caught up with Peter Norton for this interview, so did Symantec Corp. But the result of this last meeting was very different.

On May 14, Symantec announced the acquisition of Peter Norton Computing, Inc. for approximately $70 million in stock. Norton Computing will remain in southern California, along with the majority of its employees, including its founder, Peter Norton. It will retain its focus on utility programs for personal computing.

Symantec has been building a broad product line through a series of successful mergers. The new merger will not only help Symantec grow to more than $100 million in sales this year, making it one of the top ten personal computer software companies, but it will also increase the marketing and distribution forces behind new Norton Computing utility products.

the real earth-shaking news was the UNIX utilities. UNIX, you see, was never designed to let you recover files. You delete a file in UNIX and it's gone, almost instantly overwritten.

Which is why the announcement of Norton's product elicited remarks ranging from "It can't be done" to "If it works, it's going to be worth a whole lot more than $295" (its suggested list price).

Norton and his strategic partners in this effort are banking on the latter possibility. The product is the result of a collaboration—Santa Monica-based Interactive Systems, a specialist in Intel-based UNIX which was the first licensee of the operating system from AT&T and the creator of VP/ix, which lets DOS run under UNIX as a task, and Segue Software, which specializes in porting DOS applications to UNIX environments, joined forces with Norton Computing. Additionally, both Hewlett-Packard and Sun Microsystems are actively promoting the package.

"Each of the three partners in this has brought a lot to the table," says Norton. "We've brought our brand name and reputation, an approach to the user interface, some hot algorithms and concepts, my pretty face, all that kind of stuff. Segue brings an incredible inside knowledge of how UNIX software works, and Interactive brings its strength in UNIX marketing, knowing how to sell to UNIX customers."

We caught up with Norton at the announcement of the UNIX product.

Your company's strategy seems to be evolving from its DOS origins.

We realized that while DOS is really nice and the IBM PC family running DOS may dominate the personal computing world, it's certainly not the only part of it. We realized that we needed to bring our kind of software magic to other areas. So we started developing for the Macintosh, and we've just released our Norton Utilities for the Macintosh.

Similarly, we realized that other platforms could benefit from having our kind of software. UNIX was very important, and we recognized that we didn't have UNIX expertise. We obviously could have built our own expertise, but that would take a fair amount of time. Peter Weiner and Segue and Interactive came knocking on our door and said, "Gee, we would like to take your brand name software and put it under UNIX. And we'll both get rich and we'll both make a whole bunch of people happy."

Well, we're in the business of making people happy and getting rich. That's our business plan: "Make the customers happy. Get rich. Have fun."

What we're announcing today is the fruits of that. It's pretty sexy—it has really everything that represents the best of the current state of the art in DOS software, and everything that is really, really good in UNIX.

We have a two-dimensional strategy. One is to cover different key service areas: file recovery and protection, backup, file management stuff that goes on in a shell, network management—there's a bunch of service areas that are one dimension of the two-dimensional map. The other thing is the platform dimension—DOS, DOS with Windows, OS/2, the Macintosh, you have various flavors of UNIX, possibly other platforms as well. Our intention basically is to take the chessboard that this has defined and fill in as many of the squares as we reasonably can. Now clearly we're not going to be able to cover them all, and deciding which squares to land on is a tricky bit of business.

Covering multiple platforms has two different kinds of importance. One is just that every square on the chessboard that you fill in adds incrementally that much revenue. You're satisfying that many more needs for that many more customers. So each time you land on a square you get another 5%, or 30%, or some increment of business.

Every piece that we fill in satisfies some customers and adds some dollar revenue to us, so everybody's happy with that. But at some point when you've filled in enough of the squares, you're starting to accomplish something that is more than the sum of the parts.

Because when you visit an organization that's making serious use of PCs, it is very rare to find one kind of machine. What you normally find is that there will be an office full of PCs, and then some Macs here and there, where somebody wanted them or the art department needs them. Or vice versa, an office full of Macs, but the financial type has a PC. And then you've got a network server that might be running OS/2 in the future, it might be running UNIX, you may have an engineering department that has some UNIX workstations, but the key thing is that you have a mixed shop.

Now individually the users are going to choose their own applications. They're going to have machines that suit them and applications that suit them, and nobody is going to buy WordPerfect on the Mac because somebody else is using WordPerfect on the PC. Applications really do get chosen for the platform, for the user, for the functionality. The MIS manager says, "I don't have a problem with the fact that I've got to support Excel or Wingz on the Mac, and Lotus 1-2-3 on the PCs. That doesn't bother me." But in some areas of utility needs, it's clear that you need some global solutions. You need backup on all those machines; you need disk uncorruption on all those machines. Now they could be as different applications from different vendors as the spreadsheets and the word processors, but there's an advantage, if only in training and support costs, to have some unified solutions. That's a key part of our strategy—we fill in all those pieces, and then suddenly we are making some people happy that no collection of separate pieces could have done.

In the DOS world, there's a market that Norton essentially owns. What are the challenges of moving into different worlds where there are entrenched competitors?

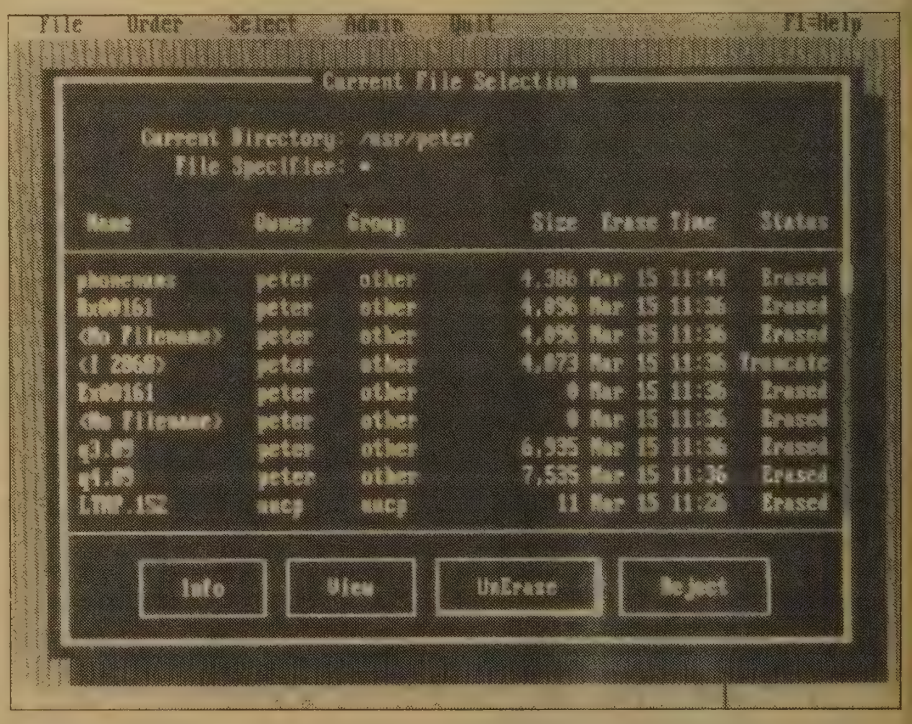
Well, there aren't any entrenched players in this area in UNIX. In the Macintosh world, there certainly are people who got there before us, but frankly with products that were not particularly strong. If you saw the reception of our stuff at Macworld Expo, you saw people more or less breaking out in applause.

There have been a lot of DOS software companies that have gone over to the Mac and have done it in a real half-assed way, and the Mac people go "Hmm. Give me a break." Well, we really did it. We didn't just make our stuff Mac-like; we think that in some ways we moved the state of the art of the Mac forward a little bit. The running-man icon, some of the presentation that we do, the full use of color—we've not only met the standard of what people expect from their Mac, but if anything we've pushed it a little hair forward. There's an entrenched competitor there, sure. How much market share we're going to take away and how much we're just going to build, that remains to be seen. But we're confident that we're going in with a great deal of strength.

On the UNIX side, this kind of thing has never been done before. That's why these people were so hungry to have our kind of stuff, because there's just nothing there. The UNIX gurus really expect this stuff to take off like crazy.

UNIX being a multitasking operating sys-

"When you visit an organization that's making serious use of PCs, it is very rare to find one kind of machine. You normally find an office full of PCs, and then some Macs here and there. Or an office full of Macs, but the financial type has a PC. A network server that might be running OS/2 in the future, an engineering department that has some UNIX workstations."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tem, a file goes with a puff of smoke much faster than it does under DOS. If you're running your own DOS machine or your own Mac, and something goes wrong, you can say "Hold the phone! Nothing touches this machine until the repairman comes!" You can't do that with UNIX—you've got a 20-user UNIX system, you aren't going to tell the other 19 people to take a break, right?

From what I've seen, this is Intel-based UNIX, and that's the platform you're focusing on.

For the moment.

Does this say anything about your sense of the future of OS/2 and Presentation Manager?

No. Nothing whatsoever. Speakers on the platform today [at the announcement] include representatives of Sun and Hewlett-Packard, and we're certainly by no means restricted to Intel chips, nor to any one variation of UNIX.

It's really where the best opportunities, the best market share, and so on and so forth, are. We'd love to cover the whole UNIX world, and eventually we may, but piece by piece we're going to be filling in as it makes strategic sense. A dozen factors go into that: how difficult adapting to another square on the chessboard would be; how large a market share it has; how much you can charge—you can charge mainframe customers more than you can charge desktop customers. All the things that go into a sound business decision. To get to what's happening with operating systems and Intel chips—UNIX is clearly going to be quite important, but UNIX is a special arena of its own. You walk into the woods, and you discover that different species live right next to each other—the chipmunks and the birds and the insects and the snakes winding their way through the leaves, and yet they're all living in the same forest.

Well, there's a lot of different operating systems that run on Intel chips, and some of them relate strongly to each other, and others are totally separate worlds. The UNIX world is pretty much distinct from the DOS/Windows/OS/2 world. Obviously there is some cross-talk, there is some cross-fertilization, and there are some people who use both. But by and large, they're separate worlds. The tremendous success UNIX is having on Intel-based platforms really says nothing either positive or negative about the future of Windows or of OS/2.

I really think UNIX is going to continue to thrive beautifully on Intel hardware, but it's not going to take a single sale away from Windows and from OS/2.

Windows and OS/2 represent the natural growth path from DOS. DOS is forever. We are going to go into retirement, we will be in old-age homes, and people will still be banging away on DOS. But those will be, to invent a term, the junior users of desktop computing. The people whose needs are heavier, more technical, more demanding on their machines, are going to be using more advanced operating systems.

Clearly, OS/2 is going to be an important advanced operating system in the future, because it delivers three key things: a graphic user interface, multitasking, and graceful extensibility.

So there's no upper memory limit or anything like that?

No upper memory limit, no storage limit, and the high-performance file structure in OS/2 is a clear example of that extensibility. It's designed so that when it's just reaching the limits of its setup, it sort of tears down the walls and expands outward. It's a beautifully extensible file structure, so it can deal with thousands of files, not just hundreds. It can deal with files that are megabytes, and tens of megabytes, and hundreds of megabytes, gracefully. It can deal with the supporting information on those files, what's called extended file attributes, where you keep track of who owns it, what applications touch it, etc. That likewise is extensible. So the high performance file structure and other components of OS/2 are all designed to breathe, to grow without becoming, as houseplant people say, rootbound. DOS is rootbound.

The people who use or supervise the use of DOS machines now look into the future and say "Gee, if I'm an MIS manager and I'm taking care of the needs of several hundred or

"Nobody is going to buy WordPerfect on the Mac because somebody else is using WordPerfect on the PC. Applications really do get chosen for the platform, for the user, for the functionality. But somebody overseeing all this sees there's some global concerns."

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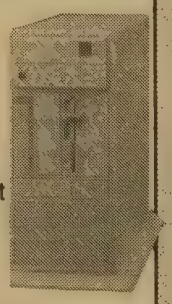

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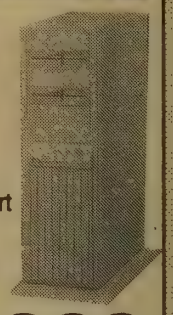

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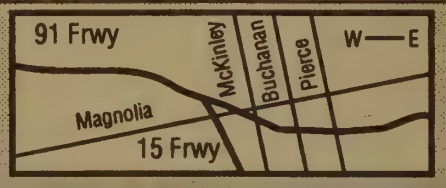

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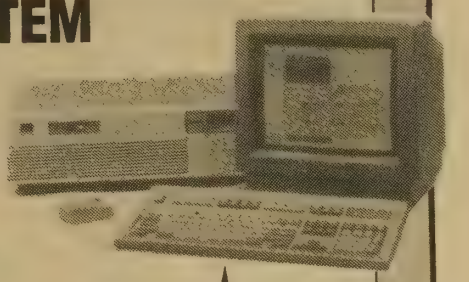

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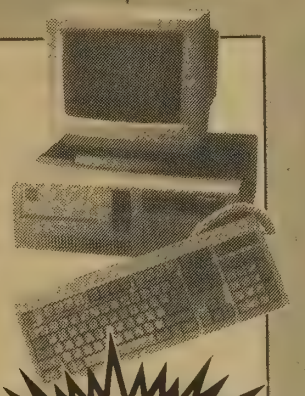

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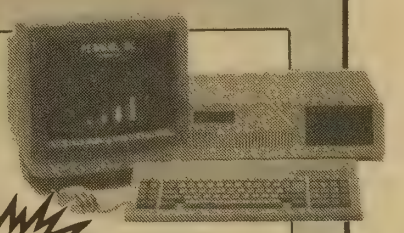

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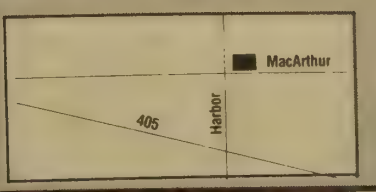

several thousand DOS users, where am I going to need to lead those people to satisfy their needs five years from now and ten years from now?" I think farsighted MIS managers see that they're going to need to have an advanced operating system on those machines. Well, certainly UNIX is an advanced operating system, but it's not the natural migration path from DOS. OS/2 is.

OS/2 is clearly, for today's DOS users, their future operating system when they need all those facilities. When they don't need it, they can stay with DOS, which is just dandy; they can migrate to Windows, which is a beautiful half step into OS/2; and then they can move on into OS/2 or stay in Windows. Windows provides a whole lot of power, and if you don't need everything that OS/2's going to deliver, you can stay in a relatively less expensive, relatively easy environment to be in.

What would be some criteria for people to make that sort of decision?

Fake multitasking is wonderful for limited kinds of things, but when you need serious honest-to-gosh multitasking, then you need a multitasking operating system. You can do a little print-spooling, and maybe a little bit of background email. But when you're really doing more than one thing at a time, you need multitasking.

Say you've got a LAN. Managing your machines working in that LAN is really a separate process from the other things you do. Right there there's a need for multitasking.

Or you have an internal email system for your organization. You need to have on your screen at all times a little email icon that should have three very recognizable states, by color or whatever: "No mail."; "There's mail. Read it when you want"; "Hot flash from your boss—drop everything!" So you have sort of a gray, a yellow, and a flashing red—maybe literally that. If email is going to serve you, it needs to work in that kind of way.

Supposing you're a financial type. Supposing you work for a company that uses commodity raw materials in its product. Maybe you're mixing feed grains for animal feed—in fact, my very first computing experience on an IBM 1620, there was an outfit that did exactly that.

They mixed feed grain, and they rented time on our 1620 once a week; they would throw in this huge FORTRAN program and it would figure out, given current prices on different kinds and qualities of grain, what mix of stuff to put together to economically have a nourishing animal feed.

You need to be doing that live. If you're a company that trades financial instruments, T-bills or something, or if your company buys commodity stuff, like cement, sand, grain, whatever, you ought to be monitoring the commodity market for it constantly. So you could have a background task that multitasking allows you to do that would be monitoring current price quotations and whatever it is that's important to you, that has break points built into it so if the prices go above or below an area that you consider normal, you get a hot flash that says attention is required.

I could imagine a purchasing agent having two or three background tasks going on on his machine at all times, one invisible to him—the networking—and two visible to him—internal company email and monitoring his purchasing. And the rest of his screen devoted to whatever work he was doing—spreadsheet, database, word processing, playing a computer game because it's a slow day.... A multitasking operating system gives you the capability of doing that, and doing it well, and doing it reliably.

You combine a graphic user interface, so you can have icons, and multiprocessing, so you can be constantly monitoring email, the stock market, and whatever, and suddenly you have a compelling reason to have a full-blown multitasking graphic user interface expandable operating system like OS/2.

I'm just giving one example. But the truth of the matter is that an awful lot of people can benefit from serious multitasking once they get a chance to get a serious taste of it. Not everybody needs it all the time, and a lot of people will never need it, but many organizations and many sophisticated users of desktop computing are going to wonder how they ever got along without it. ■

"UNIX is going to continue to thrive beautifully on Intel hardware, but it's not going to take a single sale away from Windows and from OS/2."

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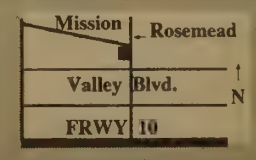

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Computing On The Go

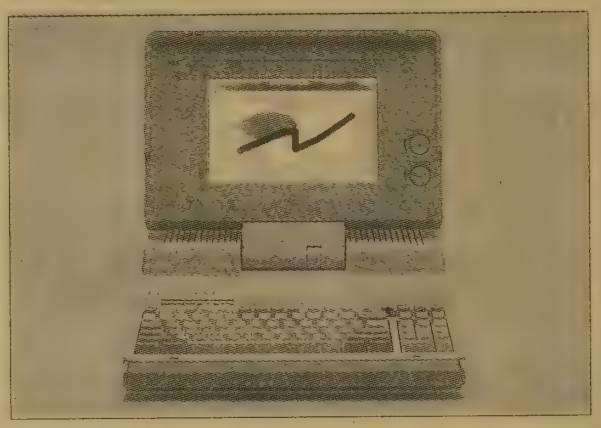
NEC's First Color Portable Plus Some Handy Gadgets

A Continuing Series On Portable Computing

BY ED KAHN

It is reported that the portable computing business is growing seven times faster than the rest of the industry. More and more, portables and laptops are competing directly with desktop systems.

As time moves on, the distinction between desktop and laptop products becomes more and more blurred. Software, for instance, is suited to both market segments, although there are specialized products designed specifically for laptop machines, while other packages are more suited for desktop units. Nevertheless, in order to adequately cover the laptop field, it is necessary to point out products that are useful for anyone, regardless of what kind of computer they are using.



USEFUL GADGETS FOR THE PORTABLE COMPUTER USER

Laptops are now using 3.5" floppy disks almost exclusively, while some desktop units still cling to the older 5.25" floppies. Nevertheless, it is clear that in time the smaller disks will dominate.

A clever product recently caught my attention. Double Disk ($39.95) is a gadget designed to convert single density 720K floppies to the double density 1.44Mb disks. Some reports say that the double density 1.44Mb desks are different inside than the standard 720K models; the Double Disk folks respond that if you ever have any trouble with a disk converted with their punch, they will replace it with a name-brand double density disk. Indeed, I have been using these modified disks for some time now, and have had absolutely no trouble.

This is a product you are unlikely to find in any computer store. Apparently these guys developed the product and then began marketing it through magazine advertising.

Another product that is pretty amazing is the Smart Label Printer ($249.95) from Seiko. Seiko is best known for watches and conventional printers, but this printer is manufactured in the United States—apparently a first for them. What sets the label printer apart from conventional printers is that it prints *only* labels. The printer comes with sophisticated memory resident software that will capture an address that you have typed into a letter. Then it will print out the label at the same time as the letter is printing on the main printer. This is one of the easiest ways I have seen to address envelopes.

The software also allows you to enter information to be printed directly into a window or capture information other than addresses from a document. Thus you can use the label printer to make labels for video tapes, canning jars, file cabinets, or anything else that has previously been too much trouble for a conventional printer. The unit is about the size of a Rolodex, so it can go anywhere and fit into any system. It connects to the computer through a serial port.

The printer comes with a roll of 130 labels. Additional labels cost

Just as in the early days of color TV, when friends and neighbors gathered around to see the new marvel, the NEC ProSpeed CSX draws everybody's attention.

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As laptops and portables grow closer and closer together, the one thing that absolutely separates them is the presence of color on laptops; with the release of NEC's new color computer, that difference too may soon disappear.

COMPUTER OF THE MONTH: THE NEC PROSPEED CSX

This computer is the beginning of a revolution that will undoubtedly come to dominate the laptop field. In time, most portables will have color displays.

That day, however, is a long way off. For the moment, we can regard this as an historic first. Just as in the early days of color TV, when friends and neighbors gathered around to see the new marvel, the NEC draws everybody's attention. The screen is adequate in size, but the color is not really comparable to a standard color monitor. This product still leaves room for lots of improvement.

The NEC ProSpeed CSX ($8,499) is certainly not going to win any awards for its petite size, weighing in at 18.5 pounds and with overall dimensions of 15" x 14.4" x 4.1". But it is a fully equipped 80386SX computer running at a brisk 16 MHz. It comes with either a 42Mb or a whopping 100Mb hard drive, in addition to a double density 1.44Mb floppy drive.

NEC has provided a generous screen size of 8.3" x 5.2". This represents the first commercially produced color flat panel display technology found in a laptop, and offers VGA resolution. If you are using the computer in a setting where portability is not a major consideration, you are able to attach a VGA or multisync monitor and get a full array of well-defined colors rivaling any desktop computer because NEC has built a standard VGA card into the CSX.

I used this computer for a couple of weeks as my only computer and thoroughly enjoyed the color, but on some applications I had to search for the cursor. Somehow, the thin blinking line got lost in the sea of color. Contrast, even though you can adjust it, never really approaches that of a good desktop monitor. Even when I cranked the contrast up to its maximum, I still yearned for more.

The design of the computer allows you to tilt the screen back just a little past 90 degrees. I prefer to be able to bend the screen back all the way to horizontal so you can fit it under a stand when you are using an external monitor.

NEC computers always have good keyboards, and this model is no exception. The keys are just firm enough so you know you are hitting the keys and not just resting your fingers. When you strike a key, you get a good tactile response. In addition, there is an adequate sound each time a key is struck. My only real complaint is that NEC left off the dimples that should be on the j and f keys. This simple tactile hint saves lots of time and mistyped words for me.

In addition to the letter keys, there is a full numeric keypad that can serve for either numbers or for cursor control. I would prefer that there were also separate cursor control keys for those times when you are using the keypad for numbers. Portable keyboards, however, simply cannot offer the same convenience as full size keyboards—which you cannot attach to this computer.

Laptop does not always mean battery operated. There is no provision for battery operation of this computer. The power supply is built in, so there is no need to carry a separate part. The system is set up to run on either 115 or 230 volts.

In addition to the hard drive, there is a double density 1.44Mb floppy drive that also provides quiet service. NEC also offers two optional external 5.25" floppy drives. One is a high density drive (1.2Mb) and the other is a standard 360K model ($495 for either). The 1.2Mb drive can actually read 360K floppies as well. Each draws its power directly from the computer, so you are not burdened with having to make separate power connections for the external drives.

The standard configuration of the NEC ProSpeed CSX Color computer includes 2Mb of 80 nanosecond RAM. This can easily be expanded by the end user to 4Mb through the addition of a 2Mb memory card ($995) that plugs into the motherboard through a convenient access door. With four megabytes, which can be configured easily as expanded memory, you can handle huge programs that gobble up RAM. This means that CAD/CAM applications that rely on color will run like a breeze on this machine.

Four megabytes of memory allows lots of options. Many applications will dictate how this memory is to be utilized, but NEC does not provide any guidelines or software for the management of this memory. One of the advantages of a powerful 386 system is that you can easily configure the memory above the first megabyte as expanded or extended memory, depending upon your needs. It will be necessary to use one of the memory management products currently available if you intend to use some or all of this additional memory as expanded memory.

An optional 2400 baud modem ($495) installs easily into a provided expansion slot. The model we were using did not include this option, so I cannot report on its performance.

The computer comes with NEC's customized version of DOS 3.3, GWBASIC version 3.2 and Windows/386. In addition, there is a disk of hardware utilities that includes a setup program and several other useful programs that are seldom needed after initial configuration.

The NEC ProSpeed CSX is not designed as an economy model. It is a high-end unit offering color. If you need this feature, this is the only game in town. Fortunately, it is a good game. While we would not hesitate to recommend this computer to anyone who really needs color, I wouldn't recommend it if you don't specifically need color in a portable. ■

This machine represents the first commercially produced color flat panel display technology found in a laptop, and offers VGA resolution. You can attach a VGA or multisync monitor and get a full array of well-defined colors rivaling any desktop computer, because NEC has built a standard VGA card into the CSX.

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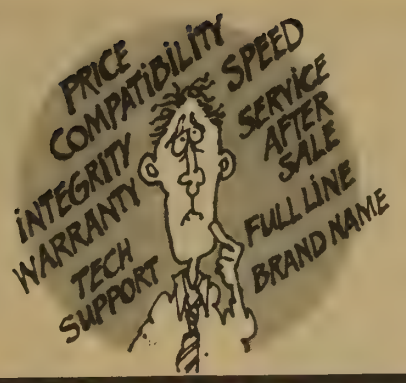

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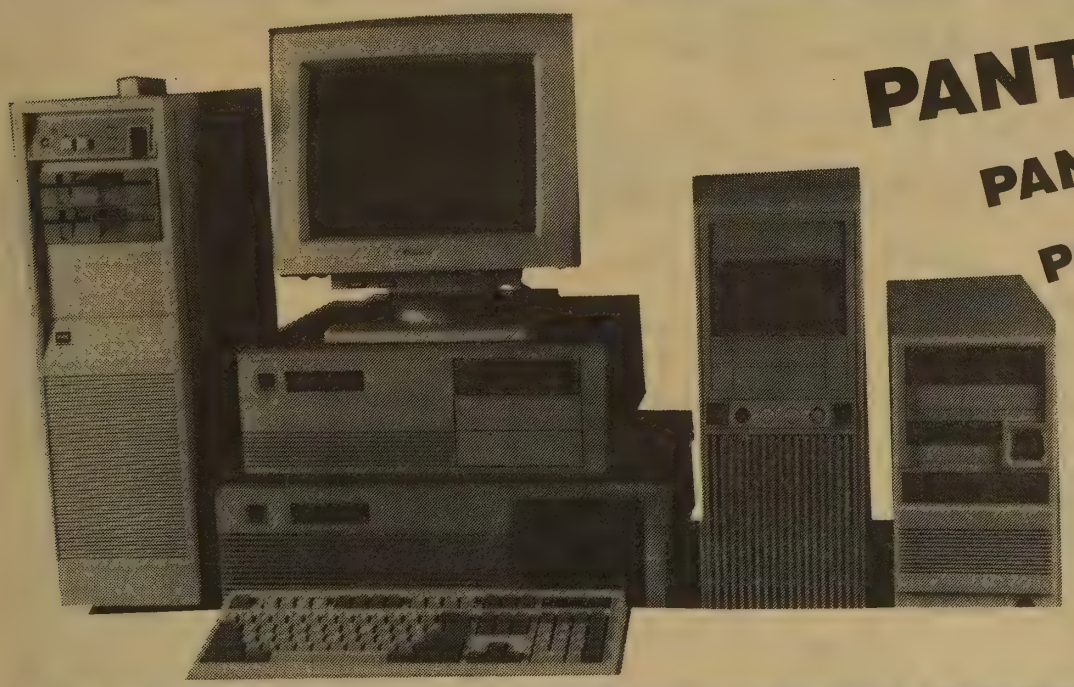

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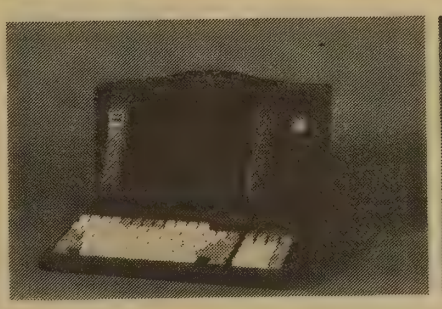

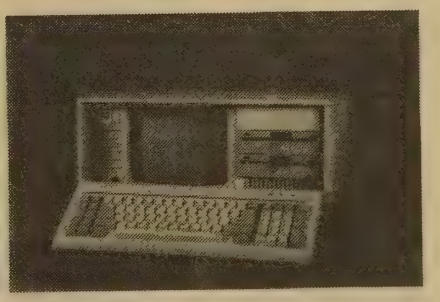

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Case Study:

Moving A Database From MS Works To FileMaker II

BY MARY EISENHART

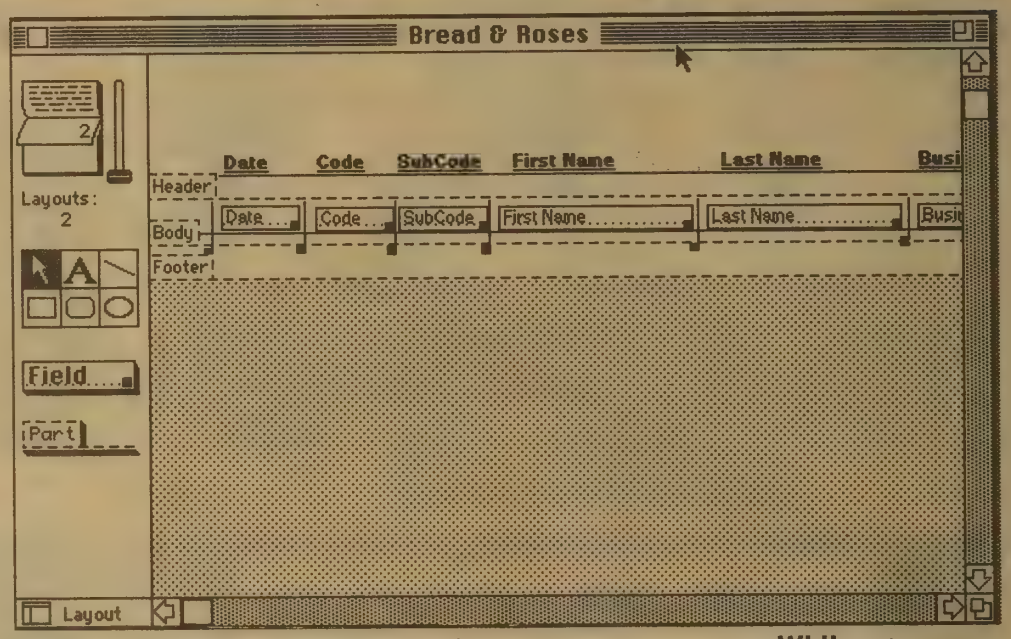
Many offices begin their computerized operations with an integrated software package that gives them basic capabilities in several applications: word processor, spreadsheet, database, and sometimes accounting or telecommunications. As their operations grow, however, they often develop needs in a particular area that the all-in-one package can't handle.

The staff of Bread & Roses, a nonprofit organization in Mill Valley, recently found themselves in this situation. Bread & Roses is in the business of bringing free live entertainment to people in hospitals, prisons, and other institutions, and their database had to keep track of thousands of people—donors, performers, volunteers, etc. They had to schedule events and coordinate fundraising appeals, and do it with the resources of a small office—four 1Mb Macintoshes and one 20Mb hard disk. The main database had grown to nearly five thousand records which encompassed a wide range of information, and the staff was beginning to want to track information in greater detail than their stalwart all-in-one Microsoft Works could handle. Much of the organization's work was still done on paper, since it was based on text reports—tracking performance and donor histories, audience reception, and the like—and Works didn't lend itself to huge open-ended comments.

When I arrived on the scene as the dial-a-nerd from CompuMentor, Paula Monsef, the office manager, was gloomily examining a demo for a vertical-market software package which purported to solve all of a struggling nonprofit's problems for a mere $1,000 per module. It had a hideous screen reminiscent of early HyperCard displays. More importantly, it seemed to have decided what it was that nonprofits needed to do and locked its hapless customers into that vision—on closer examination, it became obvious that the program didn't let users define their own fields. I was incredulous. Paula looked in the documentation. Nope. If you wanted to define your own fields, you had to buy another $1,000 module.

Faced with this unattractive scenario, we sat down and assessed what Bread & Roses wanted their database to be able to do. They didn't want to lose any of the functionality they had with Works, but they wanted greater detail and flexibility. Furthermore, although their particular situation immediately suggests all kinds of wizzy possibilities for relational multimedia databases, they were much more interested in bringing music to institutionalized folks (i.e., doing their job) than in becoming a test site for Macintosh gurus. To the greatest extent possible, they wanted to be able to be wizard-independent and handle operations on their own, creating and classifying information as they needed it.

As it turned out, nothing the staff needed was beyond the capabilities of FileMaker II—from an elegance standpoint, it would undoubtedly be preferable to have something sophisticated and relational (and as the project evolves, FileMaker's Lookup capabilities will come into play), but for real-world considerations like hardware limitations and user expertise levels, FileMaker was a clear choice. (Since Claris—and Microsoft—also give out software quite generously to nonprofits through Apple's Community Affairs program, it was an even better bargain than usual, too.)



While FileMaker will create columnar layouts automatically, it requires you to draw grid lines by hand.

MOVING THE DATABASE

While I've spent a fair amount of time using FileMaker in various projects over the years and been pleasantly amazed at how easily it handles merges (one seven thousand-record

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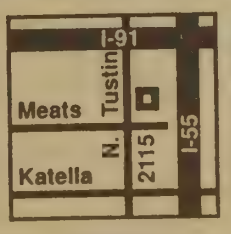

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monster that had started life in dBASE II, migrated to Informix, and was now moving to my Mac came over without a hitch), I wasn't at all familiar with Works and how it deals with such matters. Fortunately, the creators of Works have made this transition as painless as possible—a short, clear paragraph in the manual and a single button in the **Save As** dialog box makes exporting the data fast and simple. Just create and name the merge file and let Works export.

FileMaker's Layout mode is, generally speaking, flexible and easy to use in true Mac fashion—impressive-looking pages of various sizes can be quickly generated with familiar Macintosh tools, and by the people who are using the data.

To prepare FileMaker to import the data, create and define fields in a new database corresponding *precisely* to the fields in the Works database. Make sure spelling, capitalization, and order of occurrence are exactly the same when you're setting up the merge—otherwise FileMaker won't know where to put some parts of your data and you'll have information where it doesn't belong. (If this happens, don't worry—FileMaker shows the first record of the database with the field names, which gives you a quick visual indication if something's in the wrong place. Just re-order the fields in the merge dialog box and do the merge again after clearing out the incorrectly merged records.) You can add as many fields as you want later, but at this point you want no less and no more than you left Works with.

Then go to the File menu in FileMaker, click **Input From**, and choose the merge file from Works. FileMaker will give you a running count of records as it merges.

WORKING WITH THE DATABASE

Once the database was merged and all the information in the right place, the next task was to create "windows" on the data using FileMaker's Layout mode—it was fairly rare for anyone to need to see all the information in two dozen fields, but quite common to need a mailing list or a donor history. We immediately created a few layouts corresponding to the existing Works layouts (columnar lists and mailing labels), and then proceeded to design layouts corresponding to the binder pages and index cards so that that information too could go digital. (FileMaker supports custom paper sizes.)

FileMaker's Layout mode is, generally speaking, flexible and easy to use in true Mac fashion—impressive-looking pages of various sizes can be quickly generated with familiar Macintosh tools, and by the people who are using the data. Each person can devise the best way of looking at the data for his or her particular task, and create a layout accordingly.

UNEXPECTED PERSONALITY CONFLICTS

There's nothing like adapting a product you know and love to somebody else's requirements for making you see the familiar in a new light. In the course of this operation we discovered all manner of often-undocumented differences in how the two programs behaved. While everybody's happy with FileMaker's advantages and the new capabilities it gives them, the experience suggests that if you're contemplating moving your database from one program to another, you should pay close attention to the little details you like about your original program, and make sure they exist or can easily be duplicated in the new application. To avoid disappointment, talk to users before you spend your money, and have a clear sense of what's most important to you. You can't anticipate everything, but try.

Case in point: one of the Works layouts Bread & Roses used most was a large columnar layout with horizontal and vertical grids and varying field lengths, which Microsoft just made that way. FileMaker will create the columnar layout quite happily, but you have to manually adjust the size of the fields. Worse, you have to draw the grid lines by hand. At which point you discover that File-

Date	Date
Code	Code
SubCode	SubCode
First Name	First Name
Last Name	Last Name
Business Name	Business Name
Address	Address
City	City
State	State
Zip	Zip
Home Phone	Home Phone
Bus Phone	Bus Phone
Hist 90	Hist 90
History 89	History 89
AA 89	AA 89
DDLN	Notes
History 88	History 88
AA 88	AA 88
Hist 87	Hist 87
AA 87	AA 87
Salutation	Salutation
Notes	DDLN

As a useful troubleshooting aid, FileMaker displays the initial listing in a merged database with the field names displayed in the merge order. In this case, the DDLN and Notes fields were inadvertently transposed when the merge was being set up, a fact that's readily visible in this manner and easy to fix in a dialog box.

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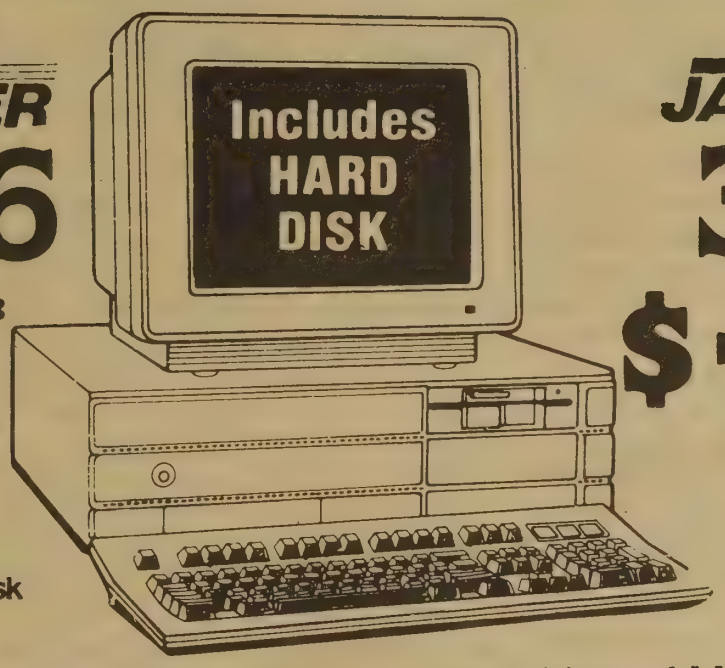

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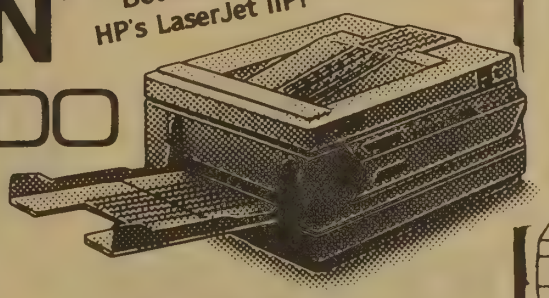

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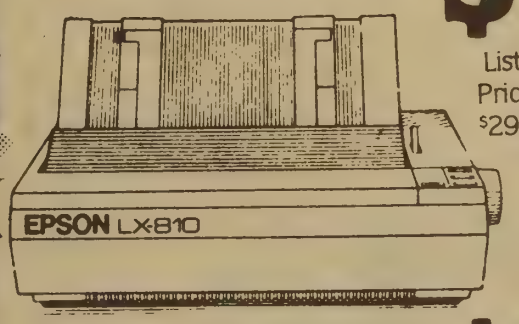

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Maker takes a particularly unforgiving attitude toward vertical lines—if a single pixel of the line extends into the header, the line will not extend the full length of the page. It emerged that this was a well-known problem among FileMaker users, but it doesn't figure prominently in sales demos.

Compounding this maddening problem, from the standpoint of the long-time Mac user who's been conditioned to think that you can cut and paste anything to anywhere, is the fact that FileMaker (apparently along with every database manager in the Mac world) will not let you cut and paste layouts from one database to another. Essentially you have to create mailing labels from scratch for each new client, for instance; in this case, it would have made everybody's life a lot easier if I could have debugged the pesky columnar layout at home and moved the finished product into the existing database on-site, but nooooo...

Apparently there are good technical reasons for this problem. I hope they get addressed in a future release.

Another esoteric problem turned up in the different ways the two programs handled searches. When the database was created in Works, each record was assigned various single-letter codes—V for Volunteer, D for Donor, P for Performer, etc. In some cases, the same person would have more than one code—e.g. PD for someone who was both a performer and a donor.

Works, when asked to search for all the P's, would call up not only the single-letter P's, but the PD's, the VP's—anything with a P in the field, regardless of where it occurred. FileMaker, it turns out, indexes each word in the database—something most people don't worry about until they notice that it only finds the records with P as the initial character in the field—it misses VP completely. (When I went wailing to my wizard buddies with this one, I got two solutions—one involving creating a new field using a calculation formula I understood but wouldn't unleash on naive users, the other involving putting a space between each letter in those fields.)

LIFE IS FULL OF TRADEOFFS

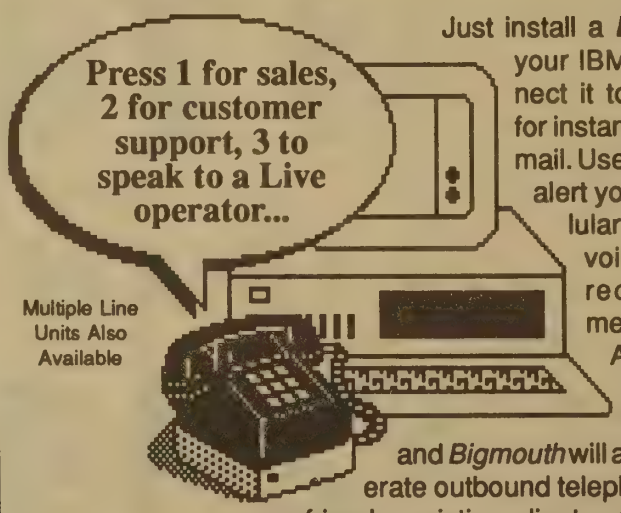
FileMaker builds big indexes for the data, which caused this database to grow from A 400K merge file to over a megabyte in FileMaker. This created an immediate problem in backing the database to floppies—currently solved with SuperMac's DiskFit, which will split large files to as many floppies as necessary.

It also runs slower than Works, and while a kindly donor has recently provided the organization with more RAM, the consensus among FileMaker experts is that getting substantially better performance will require either faster CPU's or accelerator cards. I can vouch for the fact that the database works a lot more efficiently on an SE/30 than a plain SE.

Despite these hassles, though, the staff is pleased with the increased flexibility FileMaker has brought them and the ease with which it lets them access the information they need. The office will never be paperless, but the paper will reflect timely and accurate data.

Also, at the rate Claris is forming strategic relationships with the Big Database vendors, by the time Bread & Roses really does need to move its data into some huge application, its staff will be able to keep using the interface they're using now. (Claris Corporation, 5201 Patrick Henry Dr., Santa Clara, CA 95052) ■

Voice Mail Business



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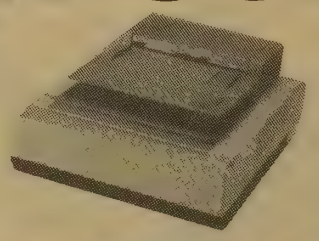

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TOPS: Entry-Level Network With Expansion Capabilities

BY WAYNE A. YACCO

This month we continue our look at low-speed LANs with an entry that's really one of the faster performers in its field. TOPS is perhaps best known for Macintosh connectivity and for bridging between PCs and Macintoshes. My network, composed strictly of PCs, is perhaps atypical. However, the FlashCard from TOPS provides AppleTalk compatibility for the PC (FlashTalk actually) without the need for a Mac.

LOCAL AREA NETWORKS

Not that I have any objection to the Macintosh. In this case, not having a Mac is not a disadvantage, though, because TOPS is a company that cares about people using both platforms.

MULTIVENDOR NETWORKING WITH TOPS

For the Mac, FlashCards provide faster data transfer than the Mac's standard physical layer. FlashTalk's 768,000 bps is three times faster than AppleTalk's 230,400 bps. For the PC, it is a little slower than some of the alternative proprietary systems such as LANtastic. However, it is an uncomplicated, easy-to-administer system, and a favorite of those who want simplicity. There is something appealing, and unthreatening, about its slim little manuals—especially since they manage to tell the whole story.

For connectivity among Macs or among PCs and Macs, FlashTalk is probably the best solution short of Ethernet (which is also available for TOPS).

In addition, FlashTalk can communicate with TOPS/Sun. TOPS/Sun turns a Sun workstation into a non-dedicated server, with support for printing from the Sun to AppleTalk printers and for accessing NFS file systems from a Sun NFS gateway. Such a gateway can be used to access data on DEC, Hewlett-Packard, Apollo, Cray, NeXT and about 150 other systems supporting NFS files.

For many users, the greatest advantage of TOPS will be the twisted-pair wiring that this system uses. FlashTalk is designed to share the ordinary telephone wiring already in place in most businesses. FlashTalk uses a daisy chain or bus topology; so, one twisted pair is required to, and another from, each node. FlashTalk TeleConnectors use the outer pair of wires in a standard RJ-11 connector, the unused pair in a single-line installation. Whether existing cable is used or new cable laid down, twisted pair is the least expensive and easiest-to-use hard-wired alternative available.

FlashTalk recognizes AppleTalk and automatically reduces its speed to communicate at the correct rate. But TOPS also offers a device called FlashBox. FlashBox plugs into AppleTalk and allows it to work at the higher FlashTalk rate. You can also use a gateway such as the Kinetics FastPath to connect TOPS TeleConnectors to an Ethernet network. Thus, in larger organizations, FlashTalk can be used in suitable applications and joined to other networks where higher performance is required.

INSTALLATION

Installing FlashCards is fairly simple. There are three sets of jumpers that configure an interrupt, an I/O (input/output) address, and a DMA channel. There are two choices for interrupt, three for addresses, and two for DMA. (The second direct-memory access channel is applicable only to AT-class machines.)

In addition, DMA can be disabled. Disabling DMA eliminates the high-speed advantage of FlashTalk and forces the network to run at AppleTalk's standard rate. However, this can be required in several cases. DMA conflicts can arise in the presence of tape backup or other devices. Also, DMA can not be used with the EMS (expanded memory) drivers necessary to provide the new generation of graphical interfaces with acceptable performance. With some limitations, it is possible to run TOPS in extended memory on 80286 and 80386-based machines.

Installation for system 3.0 is automated by the TSETUP program. TSETUP also installs the network software, TOPS/DOS. Unfortunately, this process is flawed. If you are in-

For many users, the greatest advantage of TOPS will be the twisted-pair wiring that this system uses. FlashTalk is designed to share the ordinary telephone wiring already in place in most businesses.

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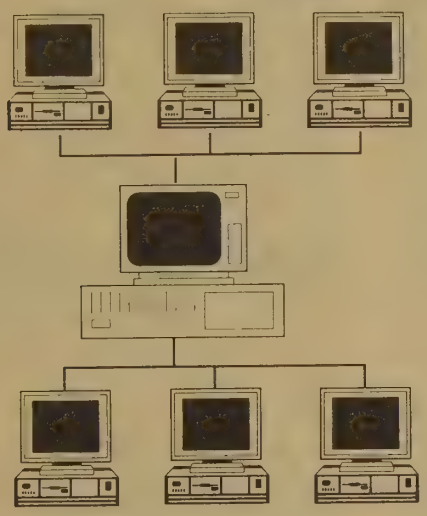

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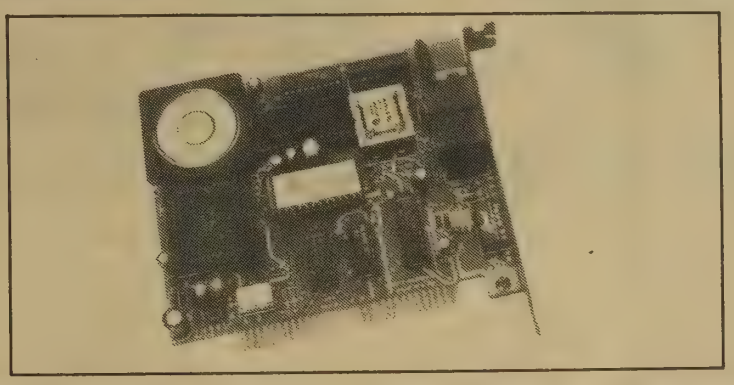

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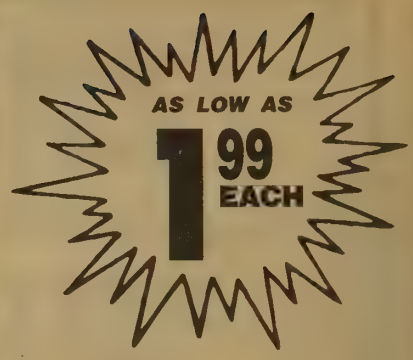

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stalling system 3.0 from 3.5" disks, you must ignore the disk numbers in the interactive instructions and insert disks in their numerical order.

A floppy-only-client installation is sometimes intolerant of very slight errors and offers no opportunity to recover. If you merely insert the wrong diskette, installation can fail and you must restart from the beginning. Discrepancies in the user manual make it difficult to determine which disks are required for a floppy-only system.

Other than minor difficulties with the installation, working with TOPS is easy. TOPS/DOS menus are simple to follow, though not graphical like the Mac equivalent. TOPS is simple to configure because it lacks elaborate privilege levels and security features. Unsophisticated passwords and read-only mode are provided, and the system supports applications with standard file and record locking. It is a system suited to installations which have minimal concern for access control.

Configuration is busier than for some other LANs. Not only the server must be configured to make volumes accessible; each client must also be configured locally before it can access a volume. TOPS is a peer-to-peer network and each workstation can act as server, client or both. The server can be specially configured as a PC-only network to save memory. In addition to the TOPS/DOS software, each network bundle includes a complete InBox electronic mail system.

TOPS offers a 90-day warranty on its software and a one-year warranty on its hardware, with the exception of its cabling. TOPS Cables and TeleConnectors, tellingly, are not only sold "as is," but the limited warranty also disclaims its warranty of merchantability—a disclaimer of questionable legitimacy in many states. That goes to show how critical and troublesome all cabling, not just TOPS cabling, is.

CONCLUSIONS

If your system's traffic loads are moderate, if you need a network that's easy to install, manage, and maintain, if you need connectivity in a heterogeneous environment, if you need a low-cost solution, you should definitely consider TOPS. It could wind up tops on your list. ■

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UNIX On TV

Video Resource For The Business User

BY BENNETT FALK

UNIX is an operating system in search of an aesthetic. Never mind that it started out as a project to bring to expression some elegant ideas; very few of the UNIX system's users are equipped to appreciate the artfulness of the algorithms and concepts that UNIX embodies. Never mind the knock-down, drag-out fights to determine which of the rival graphical user interfaces will succeed UNIX's traditionally clunky command line interface. The user interface question is a power struggle in which aesthetic considerations are secondary at best.

UNIX

No, the real aesthetic problem is how to talk about UNIX in polite society artfully, that is, without boring everyone. This is a big problem because UNIX has become a Big Thing, a part of the culture in which we live. The language used to talk about UNIX, however, is still largely esoteric.

For some audiences, reconciling the technical language of UNIX with everyday language is no problem. On The WELL (a conferencing system in Sausalito), for example, an online discussion of dolphin-human sexual encounters got sidetracked into a discussion of the ad hoc encryption scheme (called "rot13") widely used in UNIX circles. Rot13 is a simple way of encoding items that might be offensive to a general audience. Once the idea of rot13 was introduced in the dolphin-human sex topic, everyone had great fun playing around with the algorithms and command lines that, looking like gibberish themselves, have the power to turn readable text into gibberish and then back into readable text. The rot13 discussion elicited a mixture of fascination and amusement, and eventually everyone returned to the original discussion.

Copyright © 1990 by Bennett Falk. All rights reserved. *Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed here are his own.*

Of course, The WELL is an unusual environment. In general the people who use The WELL are fond of esoterica and tolerant of digressions. There are also enough UNIX devotees among its subscribers to ensure that UNIX topics are treated authoritatively. Because the UNIX experts are also interested in other topics (like dolphin-human sex), pieces of UNIX lore are likely to show up just about anywhere.

The rest of the world is not so lucky. Books and manuals are still the main source of knowledge about UNIX, but the manuals don't say anything about how to integrate what you know about UNIX with anything else. Outside of enclaves like The WELL, the business of putting UNIX on some kind of cultural map is done by journalists in columns or magazines (*UNIX World, UNIX Review, UNIX Today*) devoted to UNIX.

UNIX VIDEO QUARTERLY

The latest experiment in UNIX journalism is David Fiedler's *UNIX Video Quarterly*. The *Quarterly* is a video magazine about UNIX that features interviews, demonstrations of products, book reviews, and coverage of events, and it's interesting to see where, on the cultural map, this experiment puts the UNIX community. (For more information, write UNIX Video Quarterly, P.O. Box 220, Rescue, CA 95672, (916) 677-5870.)

David Fiedler is the executive producer, writer, and narrator for *UVQ*. He has written extensively about UNIX and worked as a consultant on issues related to UNIX and C. But video is a tricky medium, and it will take more than knowledge of the industry to make the *UNIX Video Quarterly* a success.

The premier issue of the *Quarterly* contains 16 items, including an interview with David Flack of *UNIX World*, an informal overview by Jim Joyce of some recent books about UNIX, newsy pieces about UNIX Expo and InterOps, and a dozen demos of or commentaries on products by their manufacturers. This is enough to create the feeling that your living room has been invaded by a trade show.

The range of products discussed is very broad. There are databases, fax systems, graphical user interfaces, computer-assisted telephone interviewing systems, benchmarking tools, real-time operating systems, and computer hardware. There is something here for everyone, but the emphasis is clearly on what might appeal to UNIX users in a business environment; hackers, hobbyists and even system administrators may have to scramble to find items of interest.

Separating hype from information in the product presentations is not easy. There are

The opinions are naturally diverse, ranging from Intel's shrinkwrap-thumping zealot to the presenter who decried the preponderance of "toxic waste" in USENET newsgroups. This is hard to take without an occasional word from the Voice of Reason to remind the viewer that the UNIX universe is not completely unhinged.

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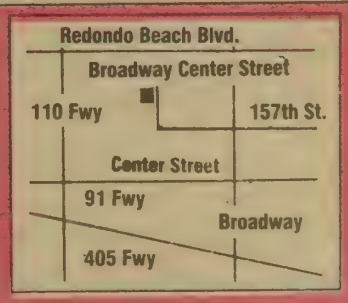

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The premier issue of the Quarterly contains 16 items, including a dozen demos or commentaries on products by their manufacturers. This is enough to create the feeling that your living room has been invaded by a trade show.

no paid advertisements in the *Quarterly*, but the product segments are essentially the manufacturer's demos, not critical reviews by disinterested parties.

Even taking this into account, some demos translate well to video and some do not. Three of the products discussed are graphically interesting: Looking Glass from Visix, OpenLook from AT&T, and Informix's multi-media database product On-Line. Of these, Looking Glass fares best, with a crisp graphical user interface reminiscent of that used by NeXT. The screens shown in the Open Look segment of *UVQ* are hard to read, and the video capabilities of Informix's On-Line don't re-photograph well. Seeing a video of a graphics product really isn't an adequate substitute for seeing the product perform in person.

AVOID TALKING HEADS

In its first issue, the *UVQ* seemed to grope for stage presence. David Fiedler himself seemed self-conscious in front of the camera, and his delivery of the introductory material for the various segments should qualify him for a charter membership in Bob and Ray's Slow Talkers of America.

Introducing the interview with David Flack, Fiedler alluded to the television producer's maxim "avoid talking heads," and yet almost everything in the premier issue was a monologue. Real human interaction of almost any kind, two people on camera at once, would have been a great relief.

The product items were typically represented by men dressed in suits and talking fast. The man from Intel had a peculiar, evangelical intensity as he talked about shrinkwrap and unifying the UNIX marketplace. If the AT&T Open Look presenter had used the phrase "very quickly and easily" one more time, I would have run shrieking from the room. During the Informix demo, presented by a woman, the camera seemed overly fascinated with the image of a nicely manicured hand working with a mouse. Jim Joyce's segment was relaxed and easy to listen to. Dressed in what looked for all the

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AMEX MC VISA

There is something here for everyone, but the emphasis is clearly on what might appeal to UNIX users in a business environment; hackers, hobbyists and even system administrators may have to scramble to find items of interest.

world like a smoking jacket, seated in front of a large bookcase, Jim would from time to time reach up, down, left, or right, and always off-camera, to pluck a book out of thin air we could not see.

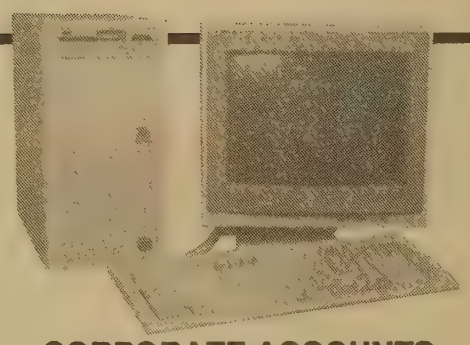
POINT OF VIEW

The fundamental problem with the premier issue of *UVQ* is that it begs the aesthetic question: it lacks an editorial voice. Even though the *Quarterly* is positioned as a kind of industry newsletter, the creators of this experiment seem unsure of what they can and cannot say. Consequently, the presentation is very conservative. Fiedler expresses no opinions about the items he presents. Even the usually voluble Jim Joyce plays it safe.

To be sure, many editorial opinions are expressed in the course of the video, but these are the opinions of the vendors whose products are represented. The opinions are naturally diverse, ranging from Intel's shrinkwrap-thumping zealot to the casual presenter from Anterior Technology who decried the preponderance of "toxic waste" in USENET newsgroups. This sort of thing is hard to take without an occasional word from the Voice of Reason to provide some kind of baseline to remind the viewer that the UNIX universe is not completely unhinged.

In fact, the Voice of Reason does eventually have its say in the interview with David Flack, Editor-in-Chief of *UNIX World*. Flack is a very good speaker, and he has interesting opinions about the forces that drive the UNIX marketplace. His view is that the UNIX industry is basically a service industry that needs to offer convenience and economy to users. A necessary component of this industry is a free press which offers accurate technical information and reasonable opinion in language everyone can understand without being obligated to the vendors' interests.

If it can take this lesson to heart, the *UNIX Video Quarterly* will be journalism worth watching. ■



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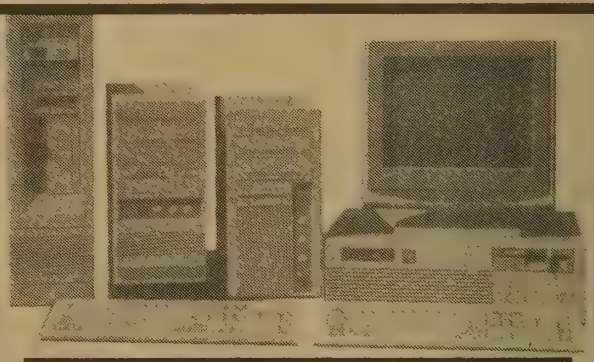

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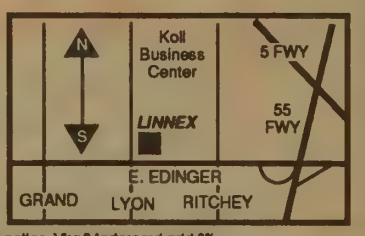

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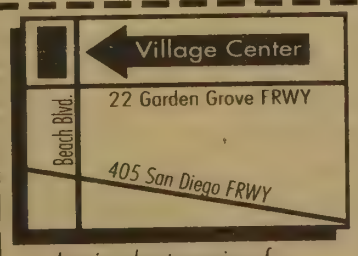

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Disney Animator Finds Happiness With Amiga Home Studio

BY BEN & JEAN MEANS

You may not know Heidi Turnipseed by name, but you've probably marveled at her work on Disney classics like *Robin Hood, Winnie the Pooh and Tigger Too, The Rescuers* and *The Fox and the Hound.* A full Disney animator, Heidi blazed her name brightly into animation history with her work on the Don Bluth production of *The Secret of NIMH,* which became the top-grossing first release animated film of all time; the groundbreaking video arcade game "Dragon's Lair"; and the legendary Stephen Spielberg production *An American Tail.*

Heidi Turnipseed is one of fewer than 50 currently working animators who have earned the prestigious title of full Disney animator. In 15 years in the Disney studio and with the brilliant renegade Bluth, studio animation was the only career she had ever known. When rising costs and controversial contracts forced Don Bluth onward to the friendly financial climate of Ireland, Heidi stayed wistfully behind. Faced with an uncertain future, she remembers, "I had broken away from wanting to be in the studio. I didn't want to go back and work in-house at Disney or Filmation or one of the Saturday morning cartoon crank-out studios."

Animator Heidi Turnipseed in her Amiga-based home studio.

CLASSICAL ANIMATION

Classical animation looks effortless, as animators breathe life into colored creatures who cavort through enchanted realms of entertainment. But behind every Disney-style animated movie is an animation army and a costly array of equipment; a home animation studio was the impossible dream until Heidi discovered the Amiga—"I couldn't afford the equipment, and the traditional animation process takes too long."

A classical cel animation begins with the animator who makes line drawings of the key frames, or "extremes," depicting the character's movement. The animator then shoots a pose, or "pencil," test of these line drawings on videotape where the line-drawn character appears to jump from extreme to extreme. If the director approves this pencil test, a team of breakdown artists and "in-betweeners" will draw the frames in between the animator's drawings to smooth the action, and shoot another pencil test to recheck the scene. Then an assistant animator does the final cleanup on the whole stack of drawings.

Copyright © 1990 by Ben and Jean Means. *Ben Means is the proprietor of Zen Yoyo Music, the author of hundreds of songs, the owner of his own 12 track studio and recent teacher of the AmiExpo Master class in computer music. Ben and Jean, contributors to many computer publications, wish to especially thank Kate Prohaska, the resident genie of Commodore Business Machines, for proving that Commodore is finally doing a lot of things right.*

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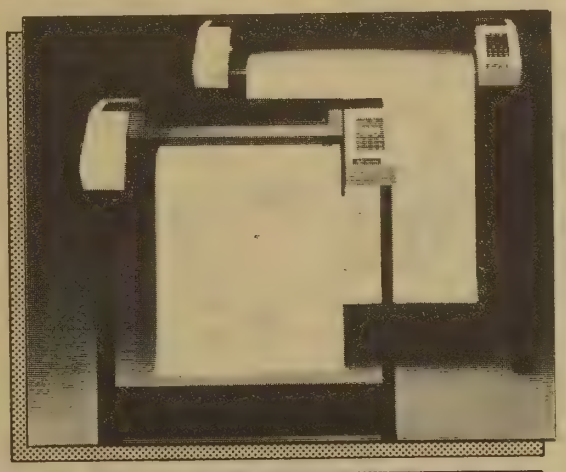

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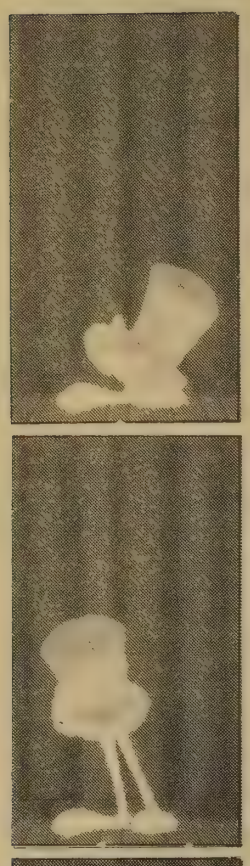

Behind every Disney-style animated movie is an animation army and a costly array of equipment; a home animation studio was the impossible dream until Heidi discovered the Amiga.

The animation work has only just begun. Next, the Xerox lab shoots the drawings onto transparent celluloid (hence, the name "cel animation"). "But," Heidi says, "the peg holes on the Xerox cels never line up 100% with the original drawing; so a Xerox checker, usually some poor fledgling trying to break into the business, has the tedious task of correcting the registration." The Xerox checker lines up the pencil drawing with each Xerox cel, repunches the holes in the Xerox cel and adds stickons so the cels won't move. Then the cels go down to the paint department for hand painting by cel painters. The camera department composites the hand-painted cels over the backgrounds, also hand-painted by scenery artists, and finally lays the scene to film, one frame at a time.

Classical animation is costly—Heidi says, "Without the Amiga, independent animation would be out of the question. There's no way I could do it. I don't own a $100,000 Oxbury animation camera, I don't own a Xerox lab that puts Xerox lines on celluloid, and I don't own a paint lab that has all the different colors of vinyl cel paint." But Heidi has handily replaced all this expensive gear for a few thousand dollars with an 8mm camcorder, a digitizer, a genlock, a few pieces of software and an Amiga 2000.

THE REVOLUTIONARY HOME ANIMATION STUDIO

"With the Amiga, I no longer have to work for a studio," Heidi beams. "And for the first time, I've been able to see my work all the way through to the final color animation.

"For the first 15 years of my career, when I finished my line drawings, an animation supervisor took them out of my hands, and I didn't see the scene again until the movie was finished. Now, I paint my own background, color my own animation and play it back in color for myself. So this tickles me; I have complete creative control!"

Heidi still draws her original line drawings on the traditional onionskin paper, but from the moment she digitizes those drawings with DigiView 3.0, the Amiga is her animation workhorse. Her low-cost Amiga gives her even more than she bargained for: it has completely eliminated the need for tedious xerox checking. Says Heidi, "Once the drawing is digitized into the Amiga, the registration is perfect! It doesn't jiggle or get off registration; it's ready for painting."

Once Heidi has all her drawings digitized into the Amiga, she has all the advantages of random access memory. She simply loads all the drawings into Cel Animator (MicroIllusions, $79.95) in order, selects the speed for playback and presses play to begin an endlessly looping pencil test on her computer monitor. This immediate feedback is a far cry from the limitations of rigid sequential media in the classical animation process.

A traditional pencil test uses an $8,000 Lyon Lamb video controller to shoot the line drawings frame by frame onto videotape, so the director can check the action and timing. It's an elaborate process, and videotape is a sequential medium. "With the Lyon Lamb," says Heidi, "if I want to change the order of one or two drawings in the middle of an 80-frame sequence, I would have to shoot all 80 frames over again. But with the Amiga's random access memory, I can just call up the order file and arrange the frames in any order I like and play them back right away.

"It takes a little longer to digitize each picture than it does to just shoot it on the Lyon Lamb, because it takes about 30 seconds to digitize each frame. But once it's in the Amiga, you have all this versatility. For instance, I did an animation of a galloping horse. Typically, I would have shot this animation on the Lyon Lamb system, which would lay the output to a video tape machine. Since tape is a sequential medium, I would have to shoot frames 1 through 10, 1 through 10, 1 through 10, 1 through 10, 1 through 10.

"When you play it back, the horse gallops five times, and then you have to reel it back to see it again. But on the Amiga running Cel Animator, I only have to digitize those frames into memory one time, and it will play as a loop as long as I want it to.

"So the convenience of this is just terrific; the Lyon Lamb system costs $8,000, and you can set up and have your own pencil test system with the Amiga for under $2,000. The Amiga makes a big difference; now an animator can have a home pencil test system, instead of having to drive into the studio. Animators don't even know this yet."

Once Heidi has perfected the movement of her character in the pencil test, all that remains is to color her digitized pencil drawings and to add scenery. Heidi's talents lie more with animation than with paint. But with tools like Photon Paint and Deluxe Paint 3, she rarely needs the specialized talents of a scenery artist. And she never has to buy more paint or clean a brush!

ANIMATING SOUND

When Mickey Mouse moves and speaks, we accept Mickey as a live character. But if one footstep sounds before his foot hits the ground, or his mouth closes before we hear him stop speaking, the illusion of life is shattered. Synchronizing a character's movements perfectly with the soundtrack is crucial to the magic of animation.

After the director decides how he wants a scene timed in traditional animation, he hands the script to the voice-over artist and sound effects people, who record the soundtrack. Then the soundreader painstakingly listens to the soundtrack at slow speed and writes down when every vowel, consonant, footstep and sound effect occurs on an "exposure sheet." The exposure sheet goes to the animator, who must match the character's movement exactly to where each pre-recorded sound will occur.

Heidi can't afford to hire a sound reader, but her Amiga handles the job quite beautifully. First, she digitizes the sound into the Amiga using Perfect Sound. Then she loads the IFF sound sample into Cel Animator where she can play it back and also create her own exposure sheet. "When I listened to the sound readers at Disney, I didn't think I could ever learn to animate to sound. Because when they crank a 35mm sound track slowly over a tape head, it sounds very muddy and garbled. I didn't even know what I was listening to. But once I load a digitized sound into the Amiga, Cel Animator breaks that sound into discrete chunks and plays them back at regular speed. So even though the sound is chopped up, it's very clear.

"Suppose I'm listening to 'hello' which plays over five frames; as I step through the frames, I'll hear 'heh..eh..eh..lo..o.' There's an on-screen gadget that will accept three characters, so I can type in the phoneme of the sound and see that on screen. Then I can save the sequence with its phoneme titles as an exposure file, which I can also print out as an exposure sheet.

"I gave a standard Disney exposure sheet to Cel Animator's programmer, Jim Donaldson, and he patterned the printout after the Disney sheet, but with a couple of new features added. This Amiga exposure sheet is more convenient and detailed than an industry standard exposure sheet. It's really excellent to work with."

Talent speaks for itself, and John Kafka of Murakami Wolf Swenson was delighted when Heidi was demonstrating her work at an LA Amiga Users Group (LAAUG) meeting one night. The Disney special for Mickey's 60th Birthday was running behind schedule, so he hired her as an animation subcontractor right on the spot. After nine years' ab-

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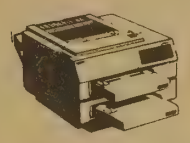

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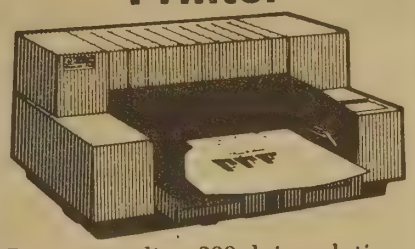

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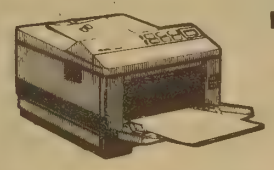

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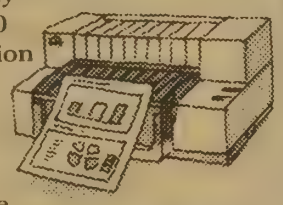

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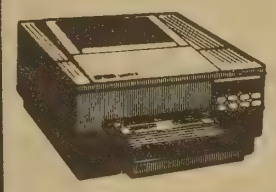

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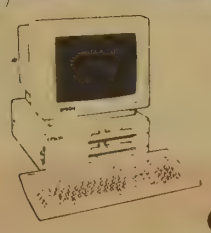

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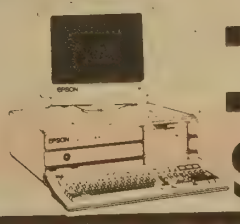

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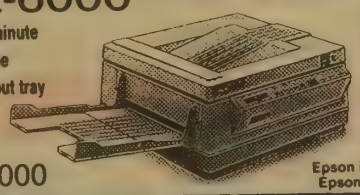

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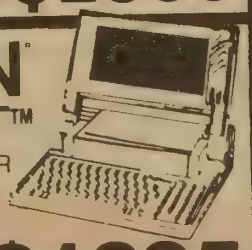

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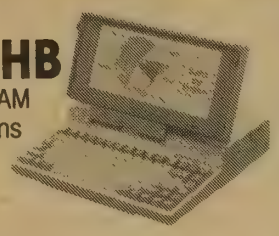

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sence, she was working for Disney again, but this time from the comfort of her own home.

Disney Television Studios sent Heidi a videotape of the live actors and soundtrack, an exposure sheet of the scenes and the tracing paper showing the rough outlines of where the live actors would be, known in the trade as a rotoscope. Although this exposure sheet and rough rotoscope helped speed things up for Heidi, what the Disney crew didn't know was that she could have done them all herself just using the videotape and her Amiga set- up.

Segment Director Sam Cornell was pleasantly surprised when Heidi showed up at the Disney television studios with a finished line-drawn animation on videotape—Mickey dancing in animated glee with costars Cheech Marin and Phylicia Rashad. But he was astounded to hear the sound coming off the tape in perfect synchronization. The expensive pencil test system they use at Disney just can't do that!

Says Heidi, "He wanted to know how I synched the sound to my rough drawings, but when I started to explain about the computer, the digitizer, and the software, he just looked at me like I was a Martian!"

After the initial shock of seeing Heidi's first pencil test with synched sound, Cornell enjoyed seeing each of her pencil tests. But as the insane deadline crunch of the last week of production set in, he began to doubt there was time for even these essentials and he asked her to just turn in her drawings ASAP, since the rest of her work looked good. The perfectionist in Heidi rebelled; she had to see if her work looked right. "I shot a test before I left home just for myself," she recalls. "That way, if something wasn't as good as I wanted it to be, I could change it before I turned it in."

In one month, Heidi produced over 50 feet of animation, for a Disney paycheck of over $5,000. She contrasts that with typical studio footage: "You were a star performer if you did ten feet a week at Disney or Bluth. I remember Ollie Johnson was at the top of the footage list on *The Rescuers*, and he had a weekly average of eight to nine feet. And I did 12 feet on my own! Not only did I get more work done than I did when I was under the pressure of the studio, but I was happier and did better work."

Heidi turned in her work for Disney on onionskin as a first step in the process of final output to celluloid. But for corporate clients like HOH Water Technologies, Heidi found that she could transfer final output directly to video with the 4096 colors of the Amiga's interlaced HAM mode.

Heidi's fully expanded 9Mb Amiga can play back up to a full 96 frames of 320 x 400 resolution in 4096 colors at ten frames a second, which amounts to 9.6 seconds of gorgeous animation. "Most discrete scenes are no longer than ten seconds," she says, "so with nine megabytes I can animate just about anything I'd ever need to."

The Amiga has given Heidi the freedom to leave the studio world and work at her placid home in the mountains of Ojai with her three dogs, two horses, one adoring husband and a cat named Punkin. True to her storybook name, Heidi and her Commodore Amiga seem destined to live happily ever after. ■

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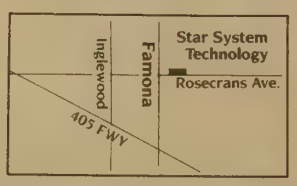

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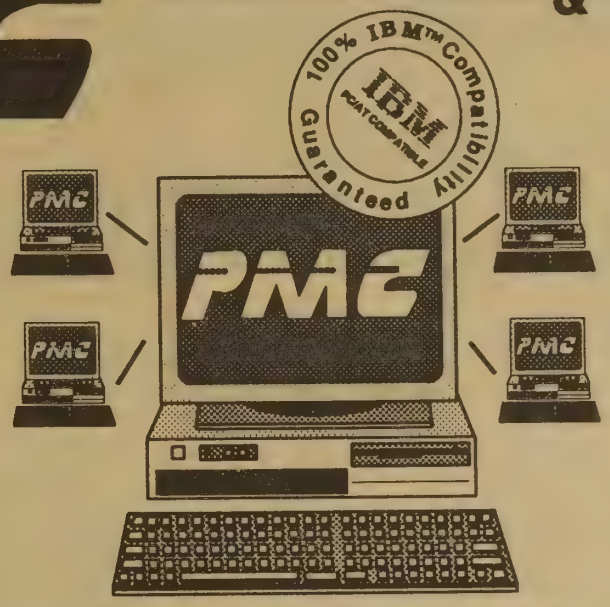

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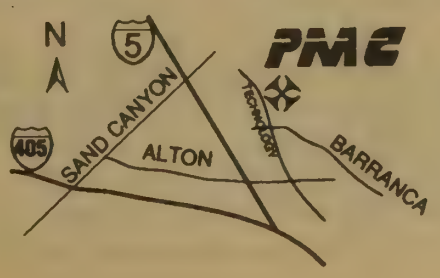

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Electronic Music Comes Home

Personal Computers Unleash Creativity

BY MARY EISENHART

In his many years in the keyboard business, LA's Joe Goodman has seen a lot of changes. He started out selling acoustic pianos, being himself a pianist; became a fan of early-model synthesizers; and, just last year, sold off the acoustic piano business to concentrate on a full-service electronic music shop that provides instruments, computers, software, and the expertise to tie it all together.

The personal computer has exerted a profound influence on the music business, opening up areas that were previously the exclusive turf of professionals. Says Goodman, "Technology enables everybody to be a songwriter/producer/performer."

According to Goodman, the popularity of the personal computer in recent years, along with the advent of the MIDI (Musical Instrument Digital Interface) standard has changed the way people make music. "It's only in the past few years that all the musicians have realized that the computer is not the enemy, it's a friend. And they're starting to make the computer an integral part of their setup."

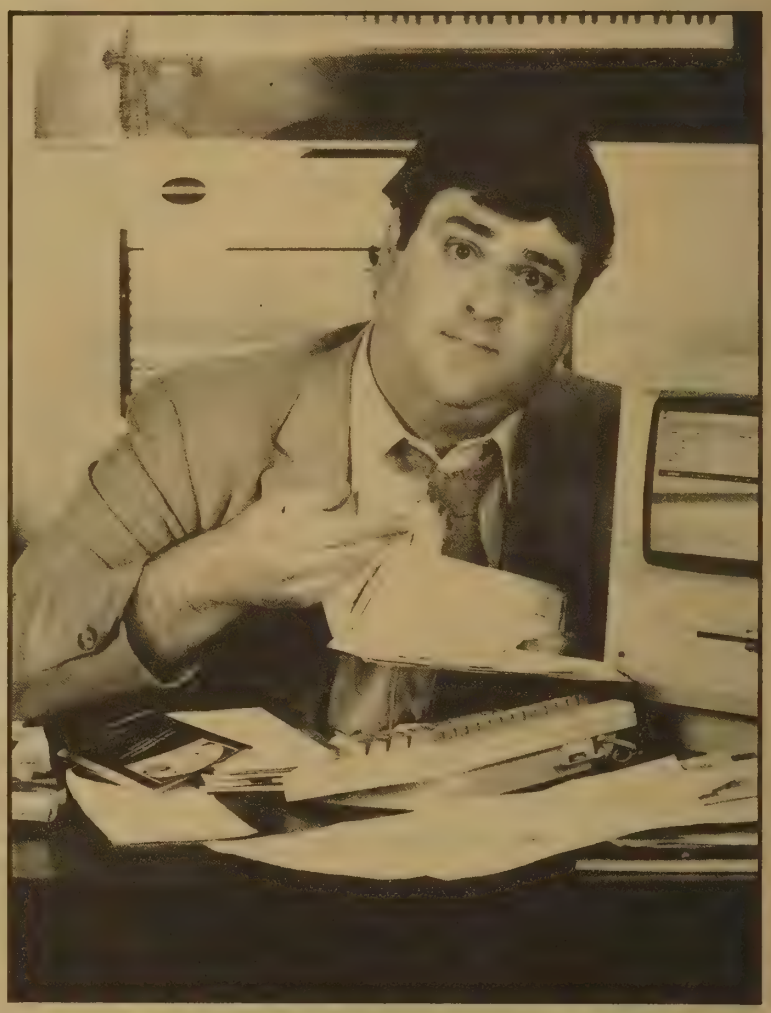
Perhaps equally important, though, is accessibility of musical tools to a whole new class of musicians: computer users. Explains Goodman, "The guy who's always been a computer-head but who's been afraid of music is now just becoming aware that there's all sorts of musical instruments, in all sorts of price ranges, that interface great with the computer."

"It's only in the past few years that all the musicians have realized that the computer is not the enemy, it's a friend. And they're starting to make the computer an integral part of their setup."

The evolution of computer-based music parallels the development of the computer industry as a whole. Goodman sees a three-stage development which looks pretty familiar to industry watchers: the early stage (not unlike the era of the IBM Priesthood) where synthesizers were primitive, arcane, and difficult to use, and the musician had to be something of a specialist to use them.

The second stage, says Goodman, "was totally technology-driven. Everything was technology. It was good in that it opened up the world of music to a huge number of people, but it also created a situation where the technology was creating the music. It simplified things, so a lot of people were doing the same thing and they weren't necessarily doing that much creating. But the technology was so new and awe-inspiring..." Shades of the early Macintosh.

Now the industry's mature enough that as far as Goodman's concerned, we're in the golden age of electronic music. "Everybody's got a lot of technology, and now it's separating the creators from the people who are just pressing buttons. They're sitting down, calming down, and figuring out how to use the technology properly and creatively, instead of just pressing every button and making all the fireworks they could."



Veteran keyboard dealer Joe Goodman says the computer has made the home music studio a reality.

Perhaps surprisingly, Goodman maintains that it's often easier for a person with computer skills to become skilled in electronic music than it is for a professional musician, because many functions are similar. And with a fairly minimal investment, a user can achieve some amazing things: "If a person already has a computer system, for $500-1,000 he can get all the tools he needs to make a very professional-sounding recording," says Goodman.

The changes in the industry have also resulted in a change in how instruments are sold—as in the business world, the integrated solution is often the most effective approach. In contrast to the acoustic-piano days, Goodman says that computer vendors, electronic instrument vendors, and the growing number of retailers who sell and integrate the products into systems, must work together to be effective. Recently Goodman Music co-sponsored a seminar with Apple Computer and synthesizer giant Roland to showcase new music capabilities. And, according to Goodman, it was a sort of electroharmonic convergence, drawing both musicians and computer users who wanted to explore each other's worlds. (Goodman Music, 818/760-4430) ■

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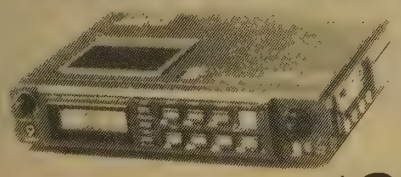

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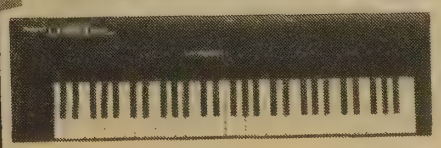

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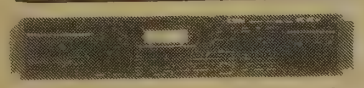

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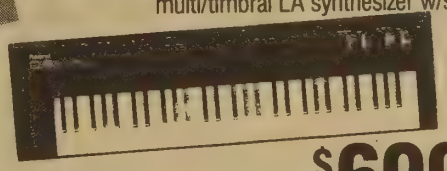

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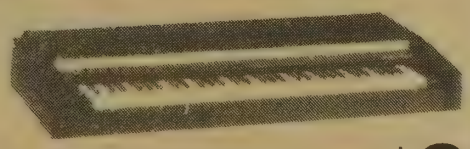

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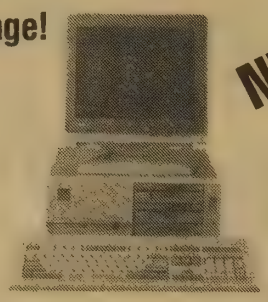

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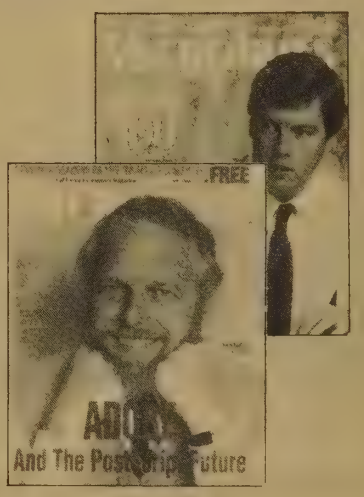

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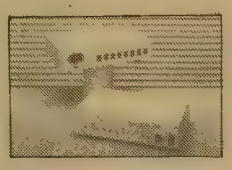

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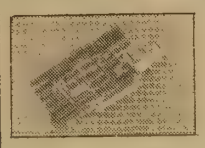

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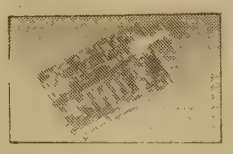

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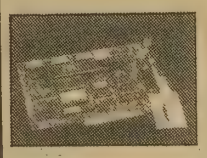

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The Amiga 3000—Hands On

BY MATTHEW LEEDS

I've had a little time to work with the A3000 in the past weeks and although the machine is still using a pre-release version of the new operating system, I thought it would be appropriate to share some of my thoughts and experiences.

GENERAL IMPRESSIONS

The machine is fast. I keep looking for the gear shift, trying to move into a lower gear. Everything happens faster: windows open sooner, programs load quicker, and games (those that work) become impossible to keep up with.

The machine is also noisy. The fan is one of those high-speed small-diameter types. I'd much prefer a larger-diameter fan that revolved at a slower rate, but the case is so low-profile there's no room for a larger fan.

AMIGA

The keyboard is not crisp enough for me. It feels mushy, and I find I have a hard time working as fast as on the A1000 keyboard. The connectors for the keyboard and the mouse have been moved from the front to the right side, a vast improvement, but it may cause problems for those who use a computer desk with a recessed compartment for the CPU.

The power switch, however, has been moved from the back to the front. This is also a vast improvement. The switch is recessed, and is a push on/push off type instead of a rocker. This should make it difficult to accidentally turn the machine off.

Copyright © 1990. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

The machine's real estate is packed; between the connectors, the fan, and the space for expansion card connectors, there's not much room left.

Of special interest are the SCSI port and the VDE (Video Display Enhancer) port. The SCSI support on the A3000 is on the motherboard, and it includes support for SCSI-2, a more robust implementation of that interface. The VDE port supports VGA scan rate monitors, and effectively removes the flicker from all display modes. It should not be used in the new SuperHires mode, as not all of the pixels get passed correctly. The same would occur on an A2000 equipped with the new chip set and a FlickerFixer from Microway.

INSIDE THE A3000

Getting inside the A3000 brings back memories of the first time I opened an A2000. The two pairs of screws on either side are obvious, but the additional screw on the back is harder to find, lost among the screws holding the fan in place. The manual does, however, mention it.

It also mentions using caution while removing the cover to avoid catching wires, but does not explain why a metal tab, attached to the center rear of the cover (the fifth screw attaches to this) does not have a ramp to route wires past it as you slide it off. This tab catches the drive-connecting wire harness every time you remove the top cover. Not good engineering.

Also not good engineering is the placement of several components inside the case. There are two banks of RAM sockets that the user can add RAM to—the chip bank and the fast bank. The A3000 ships with 1Mb in the chip bank and 1Mb in the fast bank. In most cases, once users decide to add RAM, they'll move the 1Mb in the fast bank into the chip bank and then add more memory to the fast bank. As they find they need more memory, they will continue to add it to the fast bank of RAM.

The chip bank is easily accessed once you remove the cover. However, the fast bank can only be accessed by removing the drive-mounting platform that holds the floppy and hard drives. This requires removing more screws, including one that is almost impossible to locate.

In addition, three cables must be disconnected from the motherboard, two of which are not keyed and have no orientation markings. The amount of slack in the cables is minimal, making it difficult to raise the mounting platform sufficiently to gain access to the cable sockets. Also, once the screws holding the mounting platform have been removed, any installed floppy drives are no longer attached to the mounting platform, and can slide off if the platform is tipped, perhaps while you're trying to reach a drive cable.

Commodore has produced a compact, speedy, and expandable computer that provides an excellent price/performance ratio.

This is one instance where Commodore should have taken a lesson from Apple. Any Mac II can be opened without tools, and gaining access to RAM expansion sockets is generally easy. Mounting screws are in logical places, and easy to gain access to. Fortunately, average users will not have many occasions to open up their machine.

None of this takes away from the amazing power the A3000 provides. Commodore has produced a compact, speedy, and expandable computer that provides an excellent price/performance ratio.

THE NEW OPERATING SYSTEM

I mentioned earlier that the A3000 I'm using came with a pre-production version of the new operating system. Since the A3000 is not yet available to the general public, and since Commodore is still fine-tuning the new OS, it may not be appropriate to draw hard conclusions regarding its effect on the current base of software. Still, there are some issues that I expect will exist regardless of what Commodore does to V2.0 between now and its eventual release.

A lot of software will not run under V2.0, and in many cases this will be a continuing

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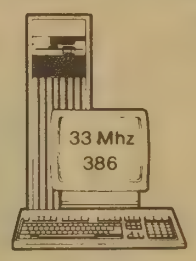

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Software that did not follow the rules Commodore set out for developers has little hope of running under V2.0. Commodore is working with developers to resolve incompatibility issues.

problem. Software that did not follow the rules Commodore set out for developers has little hope of running under V2.0. Commodore is working with developers to resolve incompatibility issues, and has in some cases put in special case fixes in the OS to unbreak some software.

But given the number of the programs that are currently broken, I believe that developers will have to revise many of the products to function correctly under V2.0—not to take advantage of its features, just to operate normally. If you rely on a specific program, or set of programs, I recommend you test them for compatibility prior to purchasing an A3000 or upgrading your current machine.

Making things somewhat easier is the fact that Commodore lets you run either V2.0 or V1.3 on the A3000. Holding down both mouse buttons while turning the power on brings up a menu from which you can select either OS. It may be possible to provide a mechanism for selecting between either version on other Amigas, but at this point it is not clear whether Commodore will provide one or leave it to third-party developers.

It is also worth noting that many software programs will not run with a CPU other than a 68000. They fail on an A2000 equipped with an '020 or '030 board, and they will fail on the A3000, as it comes with a 68030. Once again, it's important to verify that critical programs will function on the A3000 before you buy either the software or the hardware.

These issues are not unique to the Amiga. Other systems routinely have the same problems as new versions of the operating system are released, or the next generation of the hardware comes to market. Commodore is doing a good job of working with developers to help them test their software, to learn how to revise their programs, and how to plan for future development. I'm giving you the same chance. ■

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Atari Lowers Prices

BY DAVID HAWKINS

ATARI ST

Atari has dropped the list price on a number of its products. The ST520 now has a list price of $399, and you could probably get it for less than that. The Mega4 ST has a list price under $1700, which is great for a computer with 4Mb of memory! The Atari Laser Printer is now selling around $1200.

So if you're looking for a computer, check with an Atari dealer about what would work for you. Personally, I'm starting to dream of a Mega4, but my budget is telling me to get a ST520 and a 4 Mb memory upgrade.

In the next few months I plan on reviewing some of the equipment add-ons you can get for the Atari: a fax modem, optical scanners, and other items that are now available. I haven't been caught up in the fax craze so far, but if I can do it all from my ST...

MORE PUBLIC DOMAIN SOFTWARE

Last month I mentioned Gemini, a desktop replacement. The documentation files for Gemini are now available in English. They've been translated from German, which is a real help for some of us.

Also, I talked about vkiller, which helps guard your disks from viruses. If you find vkiller, you'll probably also find a program called flu. The flu program shows how viruses look to the user. It does not include actual virus code, but instead has a menu where you can select viruses and see how they would work on your system. It can be handy to know what a virus looks like.

By the way, in the interest of spreading paranoia, I would recommend that if you are going to get either vkiller or flu, get them from a trusted source, like a user's group with a knowledgeable disk librarian. If someone wanted to spread a virus, one thing they might do is give it the name of a virus killer. Sneaky, eh?

The Atari version of the Pyro! screen saver program is now available in a version that lets you configure how long the system waits for keyboard or mouse activity before blanking. The original Pyro blanked after five minutes, but now you can set the time delay.

ANTIBOMB

If you run a program on the Atari and it crashes, it puts up a few bomb symbols on the left side of the screen; the computer just waits for you to either turn it off and on, or reset it. A new program, called antibomb, presents a dialog box and offers you the opportunity to try to continue with that program or reboot the system.

You can do a WarmBoot, which is the same as using the Reset button on the back of the computer, or ColdBoot, which is like turning the computer off and waiting a minute before turning the computer back on. However, there will probably still be some crashes that will baffle even this program.

By the way, this does not imply that a lot of programs bomb. I get very few of these. But if I were programming and developing, a quick way to reset might be a very handy tool.

POOLFIX3

There's a newer version of TOS, the Atari's operating system, called Rainbow TOS, or STe TOS. It has a lot of nice features, like allowing resets from the keyboard, and it's faster. I've been using Rainbow TOS a little, and it is nice to be able to format disks for IBM/MS-DOS computers. Earlier versions of TOS could read IBM formatted disks, but couldn't format for the IBM.

There's a minor bug in the newer TOS that you would probably never run into. But there's a fix for it anyway, called poolfix3. It's an official fix from Atari and should be available at all the usual sources.

WRITE ATARI!

There's a letter-writing campaign directed at Atari, the purpose being to encourage Atari to do more advertising and marketing of the ST in the United States. If you would like to do this, write to Sam Tramiel, President, Atari (US) Corporation, 1196 Borregas Ave., Sunnyvale, CA, 94086. I've seen two sample letters, and you might be able to find a copy at a user's group. If you need a general idea of what to say, start off by saying how much you like the ST and how much you'd like to see it being promoted more in the United States. ■

Atari's new operating system lets you format disks for IBM/MS-DOS computers. Earlier versions of TOS could read IBM formatted disks, but couldn't format for the IBM.

Copyright© 1990 by David Hawkins. All rights reserved. *David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.*

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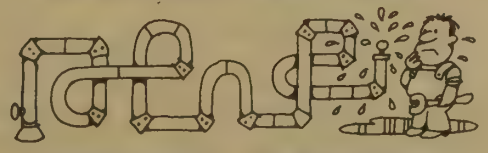

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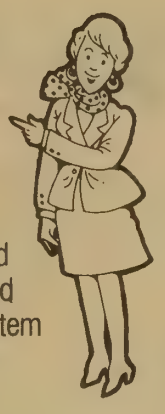

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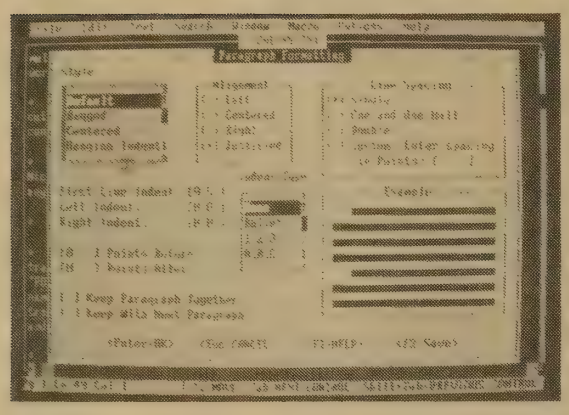
PRODUCT SPOTLIGHT

New Products

OMNIVERSE ENTERS THE NEXT GALAXY

Omniverse Software has significantly redesigned and enhanced Galaxy word processor. Version 3.0 incorporates an SAA (Standard Application Architecture) interface. Galaxy 3.0 includes Microlytics Spellfinder dictionary and Wordfinder thesaurus, a document retrieval system, an extensive printer library with complete font capabilities and a toll-free number for technical support. Suggested list price is $99.95 optional add-on dictionary thesaurus sets in ten languages will retail for $49.95. Black's Law dictionary and Stedman's Medical dictionary are available for $69.95. Omniverse Software Corp., P.O. Box 1570, Port Townsend, WA 98388. 1-800-365-7627.



NETWORKING WITH RIGHTWRITER

RightWriter is an expert system that uses parser technology to analyze business and technical writing. It helps improve writing by pointing out wordy and redundant phrases, weak sentences, and overused words. For example, RightWriter tells you "consensus of opinion" is redundant. It will suggest replacing "between you and I" with "between you and me." RightWriter also finds noun-verb disagreement, cliches, slang, passive voice, incomplete sentences and jargon.

The new network version of RightWriter 3.1 includes more than 4500 rules to catch common writing errors, and works on Novell and 3Com networks. It is compatible with all major word processors, including Microsoft Word, WordPerfect, and WordStar, as well as Multimate and any ASCII document. RightSoft, Inc., 4545 Samuel St., Sarasota, FL 34233. (813)923-0233.

UNISON WORLD CHARTS THE CHAIN OF COMMAND

Chain of Command, by Unison World, is a complete organization chart publishing package that allows you to prepare professional presentations in minutes. This powerful chart-making utility can be used by managers and professionals with little or no training. Chain of Com-

PRODUCT UPDATES

- **Clarion Software** has released version **2.1** of the **Clarion Professional Developer**, a comprehensive database application development system. Contact: Clarion Software, 150 East Sample Rd., Pompano Beach, FL 33064. (305)785-4555.

- **Symsoft Corporation** has introduced **HotShot Graphics 1.7**, an upgrade to its PC graphics software. The new version is a capture, conversion and editing utility to allow the capture of DOS, MS Windows and OS/2 Presentation Manager screens. Contact: Symsoft Corp., 444 First St., Los Altos, CA 94022. (415)941-1550.

- **Lotus** has begun shipping **Symphony 2.2**, the multi-function, integrated PC software package. They also announced a special upgrade price for registered users who upgrade directly from Lotus between today and June 30, 1990. Contact: Lotus Development Corp., 55 Cambridge Pkwy., Cambridge, MA 02142. (617)577-8500.

- **Oracle** is now offering version **5.1C** of **Professional Oracle Tools and Database for MS-DOS**, with a new menu-driven command shell interface, added support for third-party memory managers, and Microsoft Windows 286. Contact Oracle Corp., 20 Davis Dr., Belmont, CA 94002. 1-800-345-3267.

- Version **2.12** of **Novell's Entry Level System NetWare Level I** is now available. It allows people in small businesses and independent workgroups of four or fewer workstations to share printers, applications, hard disks and data through a NetWare server. Upgrades from v.2.0a costs $380. Contact Novell, Inc., 122 East 1700 South, Provo, UT 84606. (801)379-5900 or 1-800-453-1267.

- **Publish It! 3**, the latest version of Publish It! by **Timeworks** is now available. Publish It! 3 includes improved compatibility, increased PostScript, PrintShop IIGS and Newsroom Graphics support. For registered users the upgrade costs $30. Contact Timeworks, 444 Lake Cook Rd., Deerfield, IL 60015. (708)948-9200.

- **KnowledgePoint** released the upgraded version **2.20** of **Personnel Policy Expert**, software that writes personnel policies tailored to the user's needs. The 2.20 release features new policy topics, including Emergency Closing and Drug Testing, as well as minor technical enhancements. Contact KnowledgePoint, 1311 Clegg St., Petaluma, CA 94954. (707)762-0333.

- **Rupp Corp.** has introduced version **2.0** of its hard disk locking software utility, **FastLock**, that includes a Default Password, Master Password, and the ability to lock a drive from the DOS prompt or from a batch file. Upgrades from v.1.0 are available fro $19.95. Contact Rupp Corporation, 7285 Franklin Ave., Los Angeles, CA 90046. (213)850-5394.

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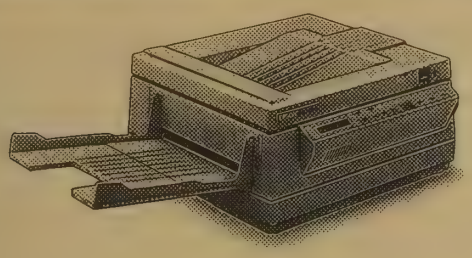

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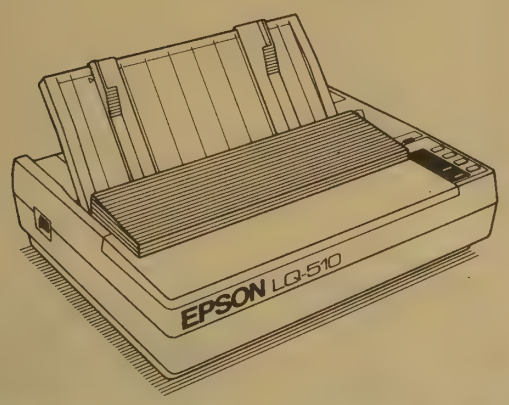

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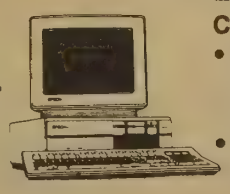

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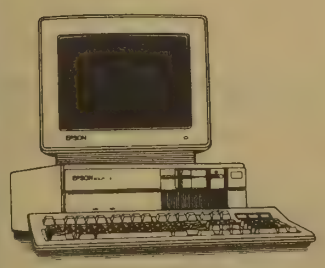

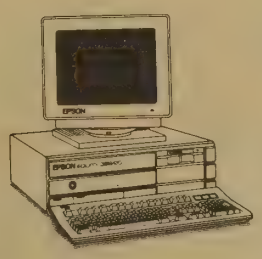

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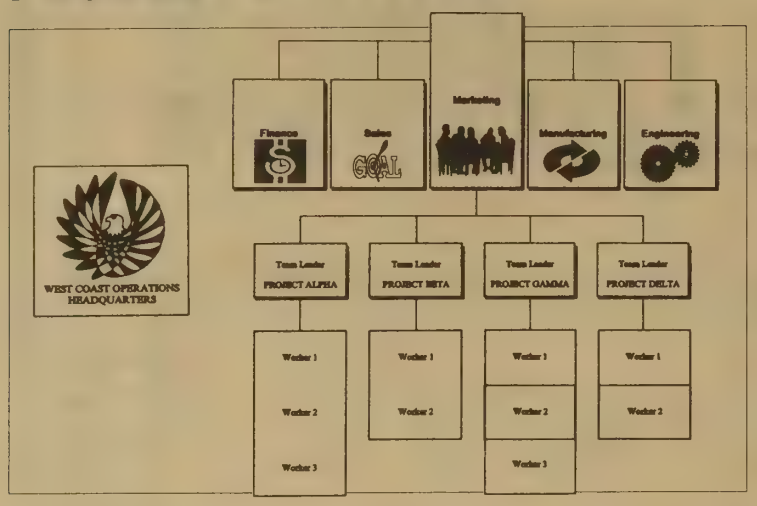
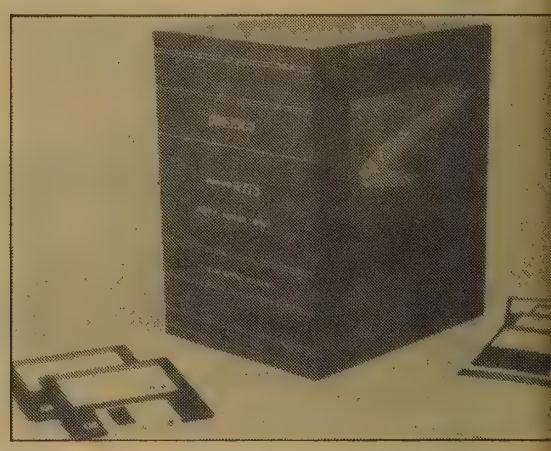


mand comes with a Graphics Library that includes fifty images from Marketing Graphics, Inc.'s PicturePak clip art series, and allows users to import scanned images or graphics. The program automates fit-to-page printing (where the chart is scaled and laid out to fit any given page), so every chart or portion of a chart always looks its best. ($149.95). Kyocera Unison, Inc., 1321 Harbor Bay Pkwy., Alameda CA 94501 (415)748-6964.

DECISUS INTRODUCES INNOVATIVE PC DECISION SUPPORT SOFTWARE

Decisus, Inc., a Xerox company, has introduced Business Wits, a family of integrated decision-support software products that helps business leaders make key management and financial decisions quickly and accurately on a personal computer without programming. The first four products announced are oriented toward the financial marketplace, particularly financial analysts, bankers, investment counselors, accountants, and entrepreneurs. The General Business Library has 118 pre-programmed ready-to-use techniques employed in everyday decision-making. Additional techniques are available in three other Business Wits products: the Advanced Financial Applications Library, Banking and Investment Applications Library and Statistics and Sampling Application Library. (The General Business Library sells for $695, additional libraries are $195). Decisus, Inc., 9938 Via Pasar, Suite A, San Diego, CA 92126. 1-800-622-6543.



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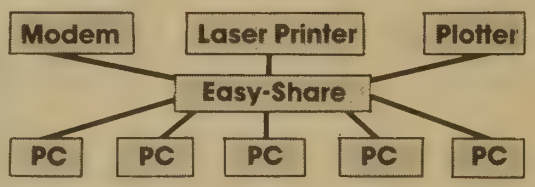

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Easy-Share has 4 serial ports standard, and is expandable up to 8 ports. Plug-in interface cards allow for serial or parallel expansion. Plus, Easy-Share comes standard with 256K of RAM and is expandable to 1 megabyte of internal onboard RAM!

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Bi-Directional Mode
Easy-Share supports a special bi-directional mode allowing the use of Modems, Plotters, or even the exchange of files between computers (requires user provided file exchange program).

Advanced Software Command Support
Easy-Share supports advanced software commands, including: Number Of Copies, Pause For Paper Change, Printer Select, Bi-Directional Modem Support, No Timeout (for Accounting Audit Trail Use), and others.

CALL TODAY AND SEE why Fortune 1,000 companies all over California have made Easy-Share their peripheral sharing solution.

FIND OUT HOW EASY (and inexpensive) it can be to share your peripherals in your own company with Easy-Share!

CALL NOW
1-800-776-5676

TANSTAAFL Manufacturing, Inc.
1800 Wyatt Drive, Suite 6
Santa Clara, CA 95054

ACCOUNTING SOFTWARE

UP 'N RUNNING IS UP 'N AT 'EM

All Systems Go has released a new accounting software package to provide ease of use, flexibility and expandability. Up 'N Running Accounting package includes General Ledger, Accounts Receivable, Accounts Payable and System modules along with the Users Guide and one hour of free telephone support. An Accounting Assurance Plan includes an annual subscription with automatic software updates and ten hours of telephone support. One day on-site installation

continued

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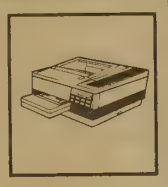
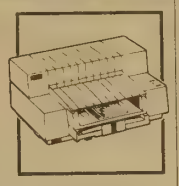
Introducing HP LaserJet III



- Highest print quality in its class
- More fonts and scalable type faces
- LaserJet Series II compatibility protects your software investment
- Resolution Enhancement technology creates breakthrough print quality

In Stock
Come See Demo!

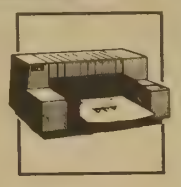
The Hewlett Packard DeskJet PLUS Printer



- 3 Year Warranty
- Laser quality, 300 dpi resolution
- Fast, quiet, easy operation
- Expanded font capability
- Compatible with leading PC's and your favorite software

$498
after $150 MFR rebate
$648 before rebate

The Hewlett Packard DeskJet Printer



- Laser quality, 300 dpi resolution
- Fast, quiet, easy operation
- Expanded font capability
- Compatible with leading PC's and your favorite software

$450
after $75 MFR rebate
$525 before rebate

The Hewlett Packard ScanJet Plus Scanner

- 256 greyscale levels (8 bit) for high-resolution images
- Compatible with IBM™ PC and Apple Macintosh computers
- OCR capability for easy text entry without retyping

$1490

The New Personal HP LaserJet IIP Printer

- Most affordable HP LaserJet printer
- Publication quality output
- Same wide range of HP LaserJet software and font support
- Backed by HP's reputation for reliability and support

$873
after $75 MFR rebate
$948 before rebate

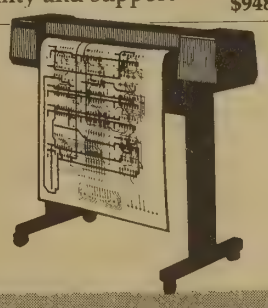
Hewlett Packard LaserJet IID Printer

- High resolution laser output
- Two tray flexibility
- Two sided printing
- Extensive software support
- Optional envelope feeder

In Stock

HP Desktop Plotters

HP 7440A ColorPro
HP 7475A Plotter
HP 7550A Plotter



HP Drafting/CAD Plotters

HP DraftPro Plotter
HP DraftMaster SX, RX, MX Plotter
HP 7600 Series Electrostatic Plotters

HP VECTRA 286, 386 & 486 COMPUTERS

For those who require uncompromising quality & reliability

HP Vectra QS/16S 386

- Intel 80386 32-bit processor running at 16MHz clock speed
- 1MB RAM
- 4-function controller card: hard & flexible disc controllers
- 3-half height data storage shelves

$1890
Choice of monitors sold separately

Also Available:

HP Vectra ES/12
HP Vectra QS/20 (386)
HP Vectra RS/20C
HP Vectra RS/25C

HP Vectra 486

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Come see us today for the best prices on the system for your needs!

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The more HP Vectra's you buy, the more HP printers we'll give you. Absolutely free. And you get to choose the mix of HP printers you want. Here's how it works:

3 Buy 3 HP Vectra 386 PC's, you get a free HP DeskJet PLUS printer.

5 Buy 5 HP Vectra 386 PC's, you get a free HP LaserJet IIP printer.

7 Buy 7 HP Vectra 386 PC's, you get HP's newest laser printer LaserJet III-Free!

Multi-User Unix & Xenix Systems
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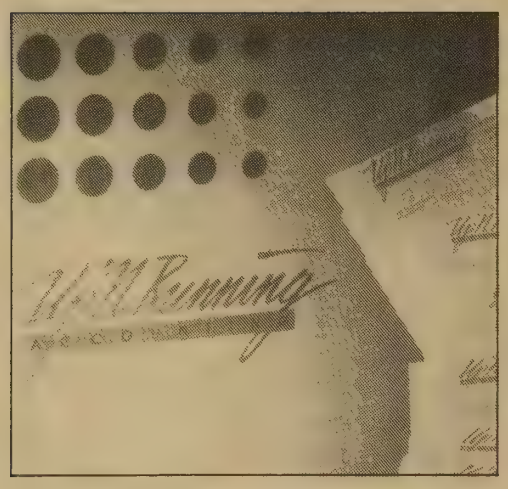
CASH PRICES ONLY. VISA/MC 3% MORE



and training along with additional on-site and telephone support are also available.

The General Ledger provides a snapshot of your company's financial position and a clear audit trail showing how you got there. Transactions from Accounts Receivable and Accounts Payable modules appear instantly on the Ledger reports.

The Accounts Payable module helps manage your cash flow. Computer-generated check selection and printing simplifies paying bills, while maintaining clear records of purchases and disbursements.

The Accounts Receivable module helps you establish a professional image with clients. Automated invoicing and statements provides a clear audit trail for sales and cash receipts. All Systems Go, Inc. 5300 Orange Ave., Suite 121, Cypress, CA 90630. (714)761-8407.

MAXELL'S SPRINGTIME OFFERINGS

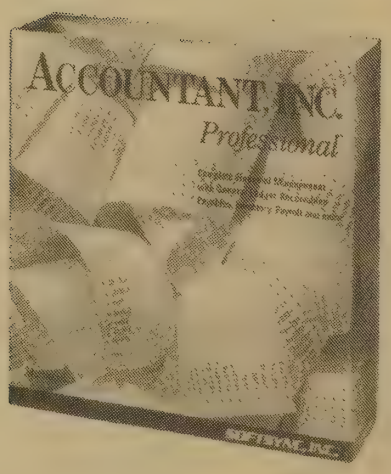
In an aggressive springtime marketing campaign, Maxell Corporation of America's Computer Products Division has announced an audio promotion and the extension of its "Travel Cash" promotion into July.

The audio promotion runs through July 31, while supplies last. A Maxell UDS-II 90 minute audio cassette is included in specially marked ten packs of Maxell's MD2-HD and MF2-HD floppy disks.

The "Travel Cash" promotion, also through July 31 and offered in conjunction with Liberty Travel, gives consumers $75 in travel cash certificates with specially marked ten packs of MD2-D and MF2-HD floppy disks. Individuals may collect up to four certificates redeemable through April 15, 1991. Contact: Maxell Corporation of America, 22-08 Route 208, Fair Lawn, NJ 07410. (201)794-5900.

ACCOUNTANT, INC. PROFESSIONAL PROVIDES FINANCIAL MANAGEMENT

Accountant, Inc. Professional from Softsync incorporates a task approach to accounting and finance. This new program for the Macintosh breaks with the separate module design common in most accounting packages to build a fully integrated package.



The program is designed to maximize ease-of-use by letting the users select options that fit their job definitions. The menu is arranged according to the tasks the user wants to perform (**Form**, **Report**, **List**, etc.) instead of by modules.

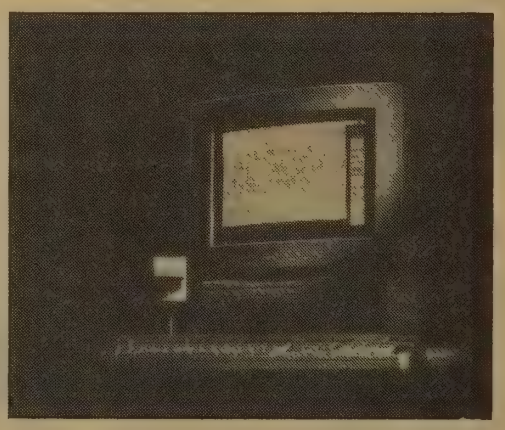
With Accountant, Inc. Professional, businesses can track an unlimited number of customers, vendors, inventory items and General Ledger accounts. The program creates invoices, purchase orders, statements, credit memos and job quotes. Reports can be accessed at any time, providing businesses with financial information whenever it is needed.

Accountant, Inc. Professional is recommended for use by manufacturing companies, service businesses, professionals and retailers. It allows a company to tailor the program to fit their particular requirements and adapt to an existing accounting structure.

HyperCard tutorials lead new users from the setup of the books through the daily routines of invoicing and updating the accounts to the period and year-end process. ($595) Softsync, Inc. 162 Madison Ave., New York, NY 10016. (212)685-2080. Fax (212)685-6322.

ONLINE INVESTING BY CHARLES SCHWAB

Charles Schwab & Co. is offering a package that gives Macintosh users everything they need to become their own online stockbrokers. The Investor MacPack, a complete personal online investment package, gives users an affordable, fast and simple electronic trading system.



Users can be online and trading shortly after receiving their Investor MacPack. They simply plug in their modem, log-on to the GEnie service and begin trading. By connecting to Schwab Brokerage Services through the GEnie service, users can place, buy or sell orders for stocks, bonds, options and over four hundred mutual funds. They can quickly obtain real-time stock quotes, get late-breaking market news and access investment research.

Users can participate in the Schwab Investors' Roundtable, which offers an electronic

continued

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TOSHIBA

Before You Choose. . . See Toshiba's Affordable T1000.

T1000

- Richly featured, yet weighs just 6.4 pounds
- Includes 512KB memory, expandable to 1.2MB
- 720KB 3.5" floppy drive, reflective supertwist
- Runs on NiCad rechargeable battery pack or AC power for continuous operation

The Perfect Traveling Companion.

T1000SE

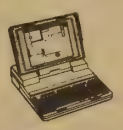
- Just 5.9 pounds and fits in a briefcase
- 9.54 MHz 80C86 CPU
- 1MB RAM standard, expandable to 2 or 3MB
- 9" diagonal backlit LCD, 640x400 graphics, CGA compatible
- Industry-standard 1.44MB 3.5" diskette drive
- Sculptured keyboard with dedicated function and cursor keys

Weighs so little. Does so much.

T1600

- 12 MHz 80286 microprocessor
- High-performance 20MB or 40MB hard disk
- 1.44MB 3.5" diskette drive-PS/2™ compatible
- 1MB memory expandable to 5MB. w/LIM/EMS

T/3200SX



- 16 MHz 80386SX CPU
- 2 Internal IBM Compatible expansion slots
- 1 dedicated modem slot for T1200/T1600 style modem
- 1MB memory expandable to 13MB
- 40MB Hard disk with 25ms access
- 1MB VGA compatible display system with high resolution gas plasma screen

Toshiba's Top Power Portable.

T5200

- 80386 CPU at 20 MHz: 80387 coprocessor
- Two internal IBM compatible expansion slots
- 40MB or 100MB hard disk standard
- High-resolution gas plasma display supports built-in VGA capabilities
- 2MB RAM expandable to 8MB

New PageLaser 6: Small Size, Small Price

PageLaser 6

- Exceptionally compact footprint is ⅓ less than other lasers
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TOSHIBA Accessories Available

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INTRODUCES

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50 To 150 Times Faster

Our advanced caching intelligent controller card allows us to have zero to half MS Access Time in many applications such as network fileserver, CAD station and multiuser systems. In operation systems such as DOS, PC-MOS, NOVELL, 10 NET, 3 COM, ETC. That's 50 to 150 times faster than your normal random access time. In fact the overall read/write performance of A.I.T. 386 is 50 times faster (5000%) than Compaq 386/25.

The Executive 386 has a hard drive access speed almost undetectably different from that of dynamic memory. For the first time the large capacity of a hard drive is accessible at an access time of ONE HALF MILLISECOND (½ MS). Why limit yourself to 2, 8 or 16 megabytes of fast memory, and pay $500 per megabyte, when you can have up to 160 megabytes at a cost as low as $10 per megabyte?

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FREE ONSITE SERVICE

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The Executive 386 comes with a full year warranty supported by knowledgeable trained engineers.

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Our friendly and knowledgeable factory trained engineers are just a phone call away. Most of the time we can solve the problems right over the phone.

AND THERE'S MORE. . .

FEATURES:

- Advanced intelligent cache floppy & hard drive controller with 512K RAM
- 2MB memory expandable to 16MB
- 64K Cache memory expandable to 256K at 0 wait state
- 1.44 and 1.2 TEAC floppy
- VIDEO SEVEN 1024x768 16 bit VGA card
- SONY 1304 (1024x768) multisync monitor
- 160MB ESDI Hard Drive
- Landmark 44 MHz

$4777

COME DEMO THE FASTEST COMPUTER YOU'VE EVER SEEN. . .

A.I.T. 386/25 WILL BEAT ANY 486 ON THE MARKET!!
(Free Mouse To Individual Who Can Find One Faster)

Authorized Dealer: AST, CITIZEN, MITSUBISHI, TOSHIBA, EVEREX & MORE

386 SX

- Intel 80386SX chip set
- 1MB memory (Simm chip, 80NS)
- Deluxe mini tower case
- 1.2 or 1.44 floppy
- 101 enhanced keyboard
- 2 serial ports, 1 parallel port, 1 game port
- 1:1 Interleave floppy and HD controller
- 44MB Conner error free HD w/imbedded controller and 32K cache
- Emerson VGA monitor
- Paradise 1024x768 Hi-resolution VGA card w/256K RAM
- 1024x768 Hi-resolution VGA card w/256K RAM
- 1 year warranty

$1865

EVEREX AGI-1800C

- 80286 6/12 MHz
- 1MB RAM
- 200 Watt power supply
- 1.2MB floppy drive
- Fixed & floppy cont.
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor

w/40MB Hard drive . . $1649

EVEREX STEP 286

- 80286
- 1MB RAM 0 wait
- 200 Watt power supply
- 1.2MB floppy drive
- 40MB hard drive
- Fixed & floppy cont.
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor
- 1 year on site warranty

2701B-12MHz **$2145**

2701A-16MHz **$2195**

EVEREX AGI-3000D

- 80386-16 MHz
- 1MB RAM 0 wait
- 1.2MB floppy drive
- 40MB hard drive
- Parallel-serial ports
- Clock/calendar
- Monographics
- Amber monitor
- 1 year on site warranty

$2389

AOC

MONOCHROME 14"
- Amber
- Flat square
- Non-glare
- Built-in tilt & swivel
- Front panel controls

$113

EGA 14"
- .31MM Dot pitch
- Non-glare
- Built-in tilt & swivel
- Power cord detachable

$353

VGA 14"
- .31MM Dot pitch
- Non-glare
- Built-in tilt & swivel
- Power cord detachable

$369

CITIZEN 200GX

- Nine wire printer
- 213 cps
- 5 Resident fonts
- Paper parking
- Color option
- 2 Year Warranty

$189

CITIZEN GSX-140

- 24 Wire printer
- 192 cps
- 6 Resident fonts
- Paper parking
- Color option
- Command-VOE
- Digital display

$299

US ROBOTICS SPORTSTER 2400PC

- 2400 BPS Internal modem
- Auto dial, auto answer
- Bell 212A, 103 compatible
- Includes software
- FCC and DOC certified

$134

US ROBOTICS COURIER HST 14.4

- 14,400 BPS speed
- MNP 2-5 Error control
- Automatic fall back/forward
- Asymonetric full duplex
- External unit

$599

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Newport Beach, CA 92660

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bulletin board and a variety of real-time conferences with experts and investors around the world. They also have unlimited access to a financial software library. Users pay only for the GEnie service's low connect time fee. There is no monthly minimum charge or maintenance.

This package includes the new Hayes Personal Modem 2400plus with Smartcom software for the Macintosh, instructions for setting up a free subscription to the GEnie service, and a Schwab online brokerage account.

Schwab is offering a special price of $159 through August 31 and has reduced their normal commissions an extra 10% for every trade executed through the GEnie service. Charles Schwab & Co., Inc., 101 Montgomery St., Department S, San Francisco, CA 94104. 1-800-344-4455.

EXPERIENCE THE FULL IMPACT OF SPREADSHEETS AND 3D GRAPHS

Full Impact 2.0 is the newest version of Ashton-Tate's spreadsheet software for the Macintosh. It combines spreadsheet capabilities with sophisticated presentation graphics and desktop publishing functions. It is designed for users to quickly and easily access, manage, analyze and present data.

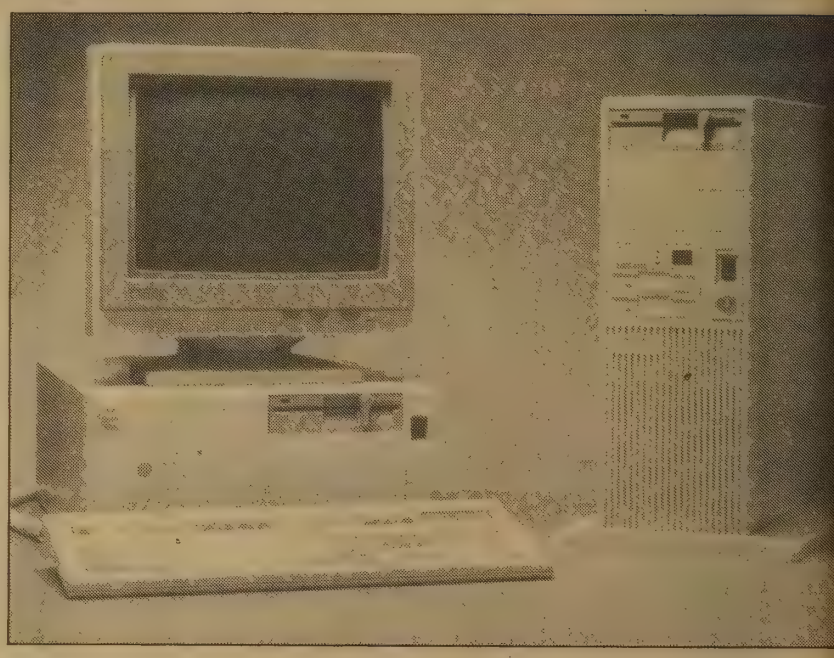
Highlights of the new product include 3D graphs, Excel data import and export, new productivity features such as intelligent recalculation, presentation enhancements such as new chart types and borders, and several developer tools, including buttons.

Full Impact 2.0 focuses on two key parts of Ashton-Tate's applications strategy: easy access to data, and optimizing products for Macintosh users. It combines spreadsheet capabilities with presentation graphics and desktop publishing functions. Additionally, Full Impact takes advantage of Macintosh users' interface concepts in a clear intuitive way. The program is easily customized to the user's particular needs and habits. This allows the user to quickly and efficiently perform spreadsheet calculations and produce reports that have the "full impact."

Full Impact has a suggested retail price of $295 and includes, free, unlimited technical support. Ashton Tate, Inc., 20101 Hamilton Ave., Torrance, CA 90509-9972. (213)329-8000. FAX (213)538-7998.

OTHER NEW PRODUCTS

Z-TECHNOLOGY OFFERS A COMPLETE 486I SYSTEM



Z-Technology Systems, the five-year-old Bay Area computer manufacturer, has introduced a new product line, the ZTS-486i system. It presents a complete integrated system by gathering all the features you would like in a computer, as well as the options that you would think of adding. Using the latest 80486 CPU by Intel "version P6" the ZTS-486i measures 117 MHz, includes 8 expansion slots and supports up to 16Mb on the motherboard, eliminating the need for a memory card.

At the heart of the machine is the ZTS power supply, with built-in surge protector up to 5000 volt spikes, a 16-bit VGA adapter, and an Omni style keyboard with 102 keys; 12 function keys on the left hand side and a separate numeric key-pad for spreadsheets. ($4986) Z-Technology Systems, Inc., 441 Grand Ave. West, South San Francisco, CA 94080. (415)558-3386.

WRITE, EDIT, OUTLINE AND FAX IT WITH TEXTMANAGER+FAX

TextManager+FAX is a powerful text editor, integrated outliner and text library manager with integrated FAX capability. Version 2.0 is fully compatible with Windows 3.0 protected mode. Users are able to fax text and PCX graphic files. In addition, TextManager can edit up to 10 documents at the same time in multiple windows. TextManager 2.0+FAX is for Windows, and has a suggested list price of $99.50; the OS/2 Presentation Manager ver-

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DR 386-33 Cache System

w/64 KB Cache . . . $2055
w/32 KB Cache. . . . $1620

- 1 MB RAM installed
- Expandable to 16 MB
- AT Case and 230 W Power Supply
- Click 101 Keyboard
- 1.2 MB OR 1.44 MB Floppy Drive
- 1:1 F/H Controller Card
- 2 Serial/1 Parallel/1 Game Port
- Full Documentation
- FCC Certified

DR 386-25 Systems

w/64 KB Cache $1385
w/32 KB Cache $1260
w/o Cache $1125
(Standard Configuration as 33MHz)

DR 386-20 System

(Standard Configuration as 33MHz) **$999**

DR 286-16 System

$585

- 1 MB RAM installed
- Expandable to 4 MB
- All in One Motherboard includes FDC, HDC, 2 Serial, 1 Parallel and 1 Game Port
- 1.2 MB OR 1.44 MB Floppy Drive
- AT Case and 230 W Power Supply
- Click 101 Keyboard
- Full Documentation

DR 286-12 System

$499

- 1 MB RAM installed
- Expandable to 4 MB
- 1.2 MB OR 1.44 MB Floppy Drive
- 1:1 AT F/H Controller Card
- AT Case and 230 W Power Supply
- Click 101 Keyboard
- 2 Serial/1 Parallel/1 Game Port
- Full Documentation

DR 386SX-16 System

$779

- 1 MB RAM installed
- Expandable to 8 MB
- AT Case and 230 W Power Supply
- Click 101 Keyboard
- 1.2 MB OR 1.44 MB Floppy Drive
- 1:1 F/H Controller Card
- 2 Serial/1 Parallel/1 Game Port
- Full Documentation

BAREBONE SYSTEMS

DEALER SPECIALS

DR 386-25 MHz. $775
DR 386-20 MHz 655
DR 386SX-16 MHz 435
DR 286-16 MHz 255
DR 286-12 MHz. 205

Standard Features:
► M/B (OK RAM) w/CPU
► AT Case & Power Supply

ADD ON SPECIALS

VIDEO CARDS

Genoa 6300 Super VGA, 1024x768, 256KB (non-interlace) $135
Paradise Chip Set Super VGA, 1024x768, 256KB. 105
Oak Chip VGA Card, 800x600, 256KB . .85
Genoa Super EGA, 800x600, 256KB. . . .75
Color Graphics Card, 640x200 26
Monochrome Graphics Card, 720x350 . .22

DRIVES

D.S. 1.2 MB, 5¼" Floppy Disk $65
D.S. 360KB, 5¼" Floppy disk 55
ST 251-1, 40MB, 28ms HDD 315
NEC 3142, 42MB/65MB, 25ms Hard Disk.345
NEC 5655, 157MB, ESDI, 18ms Hard Disk 775
Conner 3184, 80MB, 22ns HDD 605
Conner 3204, 204MB, 22ns HDD 1015

MONITORS

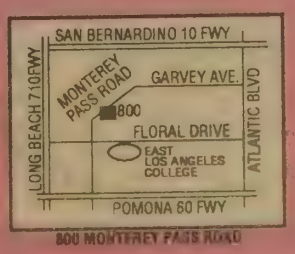
GS 1210A, 1211, Amber, Mono, 720x348 . .$75
GS 1220 12" Black & White, VGA, Monochrome 115
GS 1410 14" RGB, 640x200. 205
GS 1420 14" EGA, 640x350. 310
GS 1425+ 14" VGA, 640x480 325
GS 1430 14" VGA, 640x480 340
Livescan 14" Multisync, 800x600. 345
Loop 1469, Super VGA, 1024x768 375
Panasonic 1381, Super VGA, 1024x768, Noninterlace. 465

CONTROLLER CARDS

DTC 5150, XT MFM $41
DTC 5160, XT RLL 49
DTC 7287, AT RLL 95
DTC 6280 T15 15 MB/Sec AT SDI 1:1 170

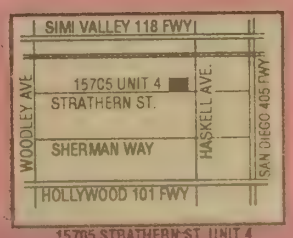
All systems carry 1 year limited parts & labor warranty.

Digitech Research Inc.
dba ATLANTIC COMPUTER SYSTEMS
800 Monterey Pass Road
Monterey Park, CA 91754
Tel: (213) 267-1638
Fax: (213) 267-1583



800 MONTEREY PASS ROAD

PC-SEL inc.
15705 Strathern Street
Unit 4
Van Nuys, CA 91406
Tel: (818) 782-1111
Fax: (818) 782-3946

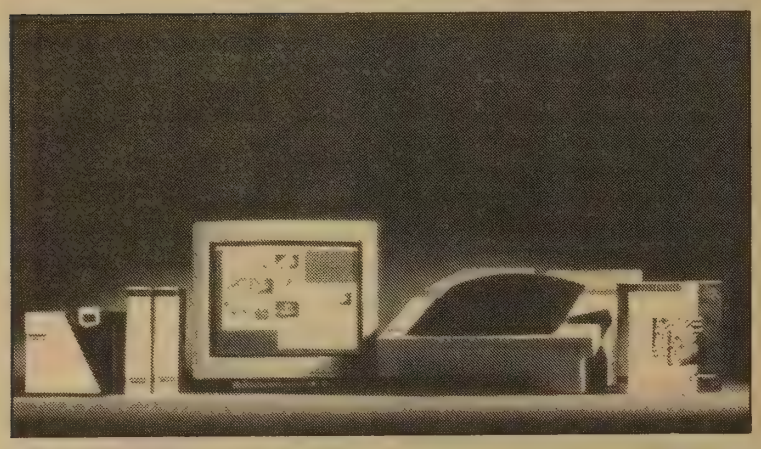


15705 STRATHERN ST. UNIT 4

sion has a suggested list price of $149.50: Solea Systems, Inc., 61 Bennington, Irvine, CA 92720. (714)551-1852.

BARNEYSCAN PROVIDES NEW DEPTH FOR COLOR IMAGING SYSTEMS

Barneyscan Corporation recently introduced a family of color imaging systems to allow publishers to manage the entire color production process from the desktop. The system is build around four components: the CIS 4520 Multi-Format Production Scanning System ($27,995) enables users to scan positive or negative film or transparencies in 24-bit color; CIS Color Access with QuickScan ($1995) is high-end color separation software; CIS Gallery ($695) is image database software for indexing and cataloging scanned images; and the CIS 3510 Professional 35mm Slide Scanning System ($9095) produces high resolution images from slides. This system is designed for the Macintosh II family. Barneyscan Corporation, 1125 Atlantic Ave., Alameda, CA 94501. (415)521-3388.



THE WORLD OF COLOR IN YOUR HAND

The HICO A4 Color Scanner is not just a new affordable hand-held scanner, but is the first to recognize 256 colors. Users can instantly transfer pictures or images from the page to the computer screen where they can change the value, saturation and hue of each picture. The Image 256 software lets you scan the picture in two or more passes and then merge the sections together to recreate the picture.

The HICO A4 Color Scanner is not just a new affordable hand-held scanner, but is the first to recognize 256 colors.

The scanner, interface card and Image 256 color editing software is available from ECA C&C Products, the American unit of Chihoo Industries of Taiwan. ($699) ECA C&C Products, Inc., 38 Route 46 East, Lodi, NJ 07644. (201)478-0302. ■

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Reviews

MS-DOS HARDWARE

PERIPHERALS

VALITEK PST-60 TAPE BACKUP SYSTEM

Manufactured By: Valitek
For: MS-DOS systems
Suggested Retail: $1495
Reviewed By: Woody Liswood

I've been looking at tape backup systems for some time, and have found problems with many of them. Many of the tape units like to work from the floppy drive controller, and many of the controllers cause difficulties. The speed of the backups, verifies, and restores is often unsatisfactory, and it's often a hassle just getting a good restore from a normal and/or verified backup.

If you are using brain-dead software which has protection systems that scatter hidden and system files throughout the disk, you can set Valitek to ignore or copy and overwrite them...

The Valitek suffers from none of these problems. It works from either the parallel or serial port and the speed is excellent for both, though you'll get the best performance from your parallel port. With other machines I've tried, I could save and verify the tape, but always had files missing or bad during restore operations. Again, not so with the Valitek.

I tested the unit with a 20 MHz ALR 386 and a 12 MHz Laser 386. The ALR has a 155Mb hard drive and the Laser has a 40Mb hard drive. Performance varies with the type of CPU, with rates from 1Mb per minute for an 8088 to 4.5Mb per minute with an 80386.

The documentation was clear, but I didn't need it much because the menu system was self-explanatory and worked well. The backup menu lets you back up the entire disk, or select individual files or subdirectories, or even tag individual files through a point-and-shoot menu, or through using file names and wild cards. If you find that you do different types of backups on a regular basis, you can also create a batch file to hold your regular specifications.

Depending on the length of your tape and the size of your backup, you can have the Valitek either append a backup to a tape already in use, or start at the beginning and reuse the entire tape. If you are using brain-dead software which has protection systems that scatter hidden and system files throughout the disk, you can set the Valitek to either ignore all hidden and system files or copy and overwrite them during restore, as you wish.

I found only one minor (software) problem with the unit, which should be corrected by the time you read this. I use a 155Mb drive, since I am always testing and working with software. When I first ran the Valitek, I had only about 90Mb of software on the disk. The Valitek worked perfectly. A couple of weeks later, I went to do some more testing, and found that I had internal memory errors. It seems that while the Valitek could handle as many megabytes of software as you wanted to save, it could not handle a subdirectory system with over 155 directories and subdirectories. If you have a very complex system, this might be a problem. (Valitek, Inc., Mountain Farms Mall, Hadley, MA 01035, 413/586-7408)

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BEST OF 1989
PC MAGAZINE
Supercharger for VGA and EGA screens. Gives you complete control over your visual environment.
UltraVision

ULTRAVISION

Published By: Personics
For: MS-DOS, EGA and VGA systems
Suggested retail: $119.95
Reviewed by: Woody Liswood

UltraVision does so much so well that I would consider it a necessary add-on to any EGA system.

UltraVision is a hardware and software system. A small board goes into the feature connector found on all EGA cards. (The card is available free of charge with a mail-in card for those who need it; VGA systems don't require the card). Personics calls it a "supercharger" board. The UltraVision TSR software works, in conjunction with that board, to give you a better display and more options

With UltraVision on my Mitsubishi multisync monitor, I get a character display of 9 x 19 dots per character rather than the standard EGA matrix of 8 x 14. The default fonts are easier to read, sharper, crisper, and generally easier on the eyes than with any of the EGA or VGA boards I have experienced.

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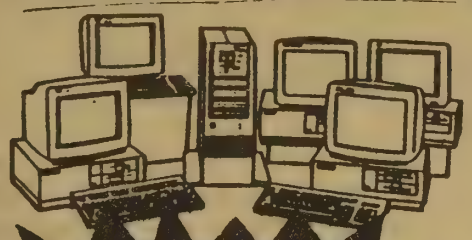

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than any of the VGA boards around. On my Mitsubishi multisync monitor, I get a character display of 9 x 19 dots per character rather than the standard EGA matrix of 8 x 14. I find that the default fonts are easier to read, sharper, crisper, and generally easier on the eyes than any of the EGA or VGA boards I have experienced.

UltraVision comes with 20 fonts for customizing your screen to your liking. Tired of the standard 80 x 25 line screen? UltraVision lets you break that barrier by going up to 132 columns and 60 lines. There are two graphic modes of 640 x 350 and 640 x 480. UltraVision comes with specific drivers and/or instructions for most popular programs, so you can address all of the capabilities of your hardware.

Installation is a snap. The manual features pictures of the EGA boards supported by UltraVision. After you install the booster card, the documentation shows you a picture of that board and tells you what DIP switches to set. For example, I have a Video-7 EGA card. I was instructed to set the SW2 DIP on that card to indicate an Enhanced Color Display. The B&W picture shows the card, points to both the feature connecter and SW2, and then displays a diagram to show exactly how the DIPs should look when set correctly.

The software installs rather easily—run install, then answer some questions. You will need to adjust a series of display screens so that they are centered on your monitor.

UltraVision comes with two additional device drivers, one to help improve compatibility with Windows, Carousel, and other mouse-based programs. I don't have any experience with Carousel, but understand that there are still problems in using it with UltraVision. Along with this, there is an UltraVision-specific ANSI.SYS which solves some problems for programs (as well as DOS 4.0) which are not expecting the extra capabilities of UltraVision. A program called 386LOAD or LOADHI loads the UltraVision TSR into high memory above the 640K barrier.

The UltraVision software lets you change among its seven options at any time. You can have a variety of color sets and palettes. You can automatically add color to typically non-color-using programs by "colorizing" the screen and display. I found that I had to leave colorization completely off, or I had very strange-looking displays in Freelance Plus. You can also select what 25- and 43-line font you want to use. Lastly, you can set the screen display size. You don't have to call up the TSR because all of these options can also be activated from a command line.

There are special pre-boot programs to customize specific programs to UltraVision. For example, I use a WS.COM, a pre-boot to WordStar. I set the UltraVision command line to a 120 x 43 line display. This way, on my screen, I can see all of the characters in a proportionally spaced line and eliminate scrolling back and forth just to see a single line of text. Makes for easier writing.

I would never give up my UltraVision card. The character display is better than that of any of the VGA or EGA boards I have used.

The newest release of UltraVision (2.0) supports VGA cards without having to use the piggyback boards. Additionally, using the

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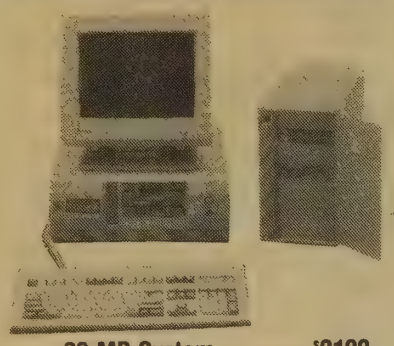

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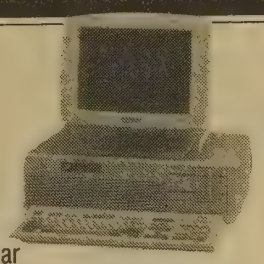

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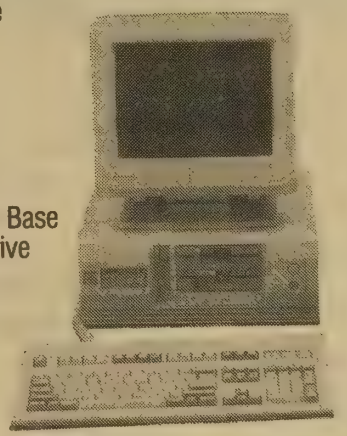

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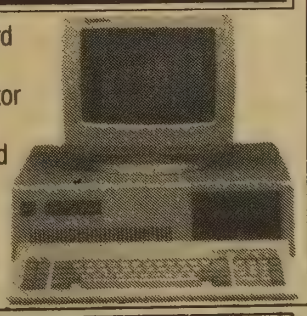

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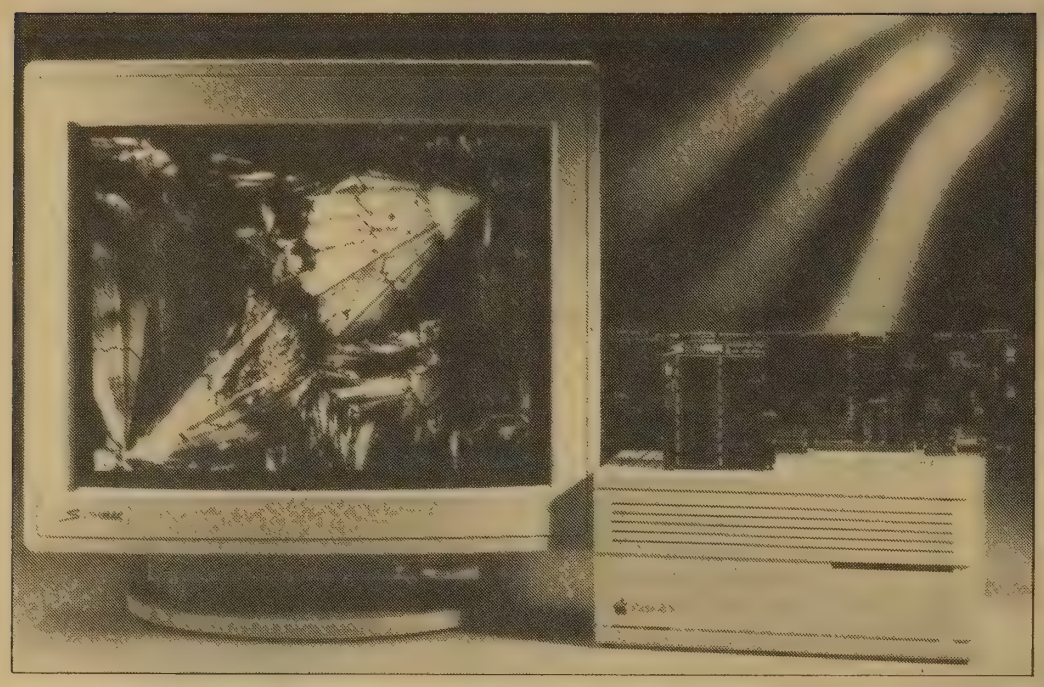

The SuperMac card/monitor combination shows a near-total absence of flicker and distortion.

ANSI.SYS file supplied with UV, you can now assign macros to F11 and F12 if you have the enhanced keyboard. (Personics, 63 Great Rd., Maynard, MA 01754, 508/897-1519)

MACINTOSH HARDWARE

PERIPHERALS

SPECTRUM/24 SERIES III GRAPHICS CARD

Manufactured By: SuperMac
For: Macintosh II family
Suggested Retail: $3999
Reviewed By: Mary Eisenhart

When we got our first look at 24-bit color on the Macintosh a couple of years ago, it was breathtakingly beautiful. Photographic-quality color, combined with scanner technology and ever-better software tools, opened up whole new graphics and presentational opportunities.

In those days, though, performance was a real problem—most 24-bit hardware demos studiously avoided having to redraw a screen, for instance, because it took forever, and the conventional wisdom was that if you were going to do 24-bit color, you had to have at least 5Mb of RAM. This had a somewhat discouraging effect on the growth of the market.

While software vendors were busily creating applications that could take advantage of 24- and 32-bit color capability, card-makers were scrambling to achieve the display quality and performance levels to make those applications work. SuperMac's Spectrum/24 Series III card qualifies admirably—not only does it give us the "millions" color option, its speed in handling demanding tasks is far better than we were expecting.

We used this card (which, like Mac cards in general, was a snap to install and configure) with SuperMac's 19" Trinitron display (although it will also work with 1024 x 768 60 Hz displays, the RasterOps 75 Hz display, and Apple's 13" RGB monitor). This is a winning combination—while our art department still prefers the Apple Two Page Monitor for monochrome work because it's the sharpest and easiest-on-the-eyes thing we've seen yet, the SuperMac is a close second in monochrome and unbeatable in color. Unlike other systems we've seen, including some that use the 19" Trinitron from other vendors, this monitor/card combination shows a near-total absence of flicker on the screen, distortion in the corners, and fuzziness of the image.

After using the card and monitor with a Mac IIfx and a Mac IIcx, we were pleasantly surprised by the system's performance. As you'd expect, the "Wicked Fast" Mac IIfx and this system crunch right through the most demanding tasks, making short work of multi-megabyte Adobe Photoshop files and scanner documents. More surprising, if you haven't looked at 24-bit systems lately, is the fact that the speed of the same hardware attached to a IIcx, while not as spectacular, is still quite acceptable. (It goes without saying that as applications get bigger and more demanding, you want all the speed you can get for practically any graphics application, but we found the speed of the IIcx system well up to the demands of constant use in our office—and we used it for everything from magazine covers and illustrations to designing Bammies T-shirts.)

More good news—notwithstanding the doomsayers who proclaimed that we'd all need to upgrade to 8Mb of RAM to do anything with 24-bit color, we found that everything worked just fine on both the IIfx and the IIcx, both of which have a mere four megabytes. Our creative director, who has a 5Mb SuperMac 8-bit system at home and passed up the company's offer of a heavily discounted upgrade to the Spectrum 24 Series 3 last year because she figured she couldn't do much with that little memory, is now kicking herself.

We unabashedly recommend the combination of this card and the SuperMac 19" Trinitron if you want to work with Mac color at its best. (SuperMac's coming out with an even faster, and more expensive, card in June, which will also be compatible with 21" monitors, which the Series III is not. If speed is your primary consideration and you're looking for a high-end system, you might want to wait and see the Spectrum 24/PDQ before you make your decision.) (SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086)

THE MOBIUS CORDLESS MOUSE

Manufactured By: Mobius Technologies
For: Macintosh II, SE and Plus
List Price: $149
Reviewed By: Mike Markowitz

A cordless mouse might be considered a solution to a problem nobody has. Apple includes a perfectly serviceable mouse with every Macintosh, and they last a long time. A few users have a strong preference for alternative pointing devices like the trackball and the graphics tablet. The cordless mouse should appeal to users who find the mouse cable annoying.

The cordless mouse has two components: the mouse itself and a receiver. The receiver has a 60-inch (1.5m) cable with a DB-9 connector (for the Mac Plus and earlier Macs). For connection to the Apple Desktop Bus (ADB), you plug the DB-9 connector into a short adapter.

The cordless mouse is slightly larger than the Apple mouse, with two buttons on top and a small button on the side. The button on the left is for normal Macintosh mouse-clicking; the button on the right has no function (it apparently was included in the design so that the same mouse, with a different receiver, could be used for MS-DOS systems that recognize a second button). The button on the side is used to "wake up" the mouse after it turns itself off. The side button also activates a special "non-linear" movement mode that increases the sensitivity of the mouse. A snap-in battery cover provides access to a compartment that holds two 1.5V alkaline batteries ("AAA" cells). The cordless mouse does not require a mouse pad.

The cordless mouse was simple to install and pleasant to use. The "feel" was not perceptably different from that of the standard Apple mouse, but several users who helped me test it reported that it lowered their scores in Crystal Quest (a game that demands extremely fine control of mouse movements). The mouse has a linear tracking resolution of 200 dpi and a tracking rate of up to 600 mm/sec. A red LED on the transmitter lights up whenever it receives input from the mouse, providing direct feedback that you are aim-

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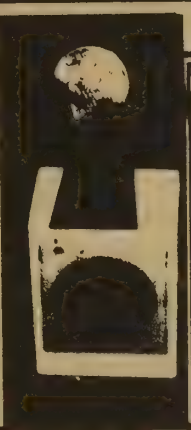

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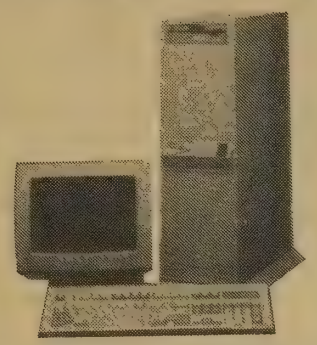

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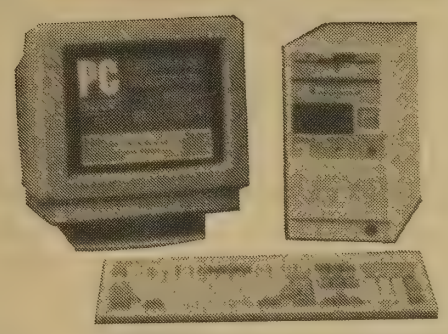

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In slide-show presentations, a speaker could move around the room freely using the cordless mouse.

ing the transmitter correctly. The manual claims a range of five feet, but we were able to register mouse clicks from a distance of up to ten feet. The receiver can detect the mouse up to 45 degrees to the left or right of its centerline.

If you don't move the mouse or click a button for approximately five seconds, it enters a standby mode to conserve power. If it is not used for approximately ten minutes, it turns itself off completely and you have to press the side button to wake it up again.

Since the great majority of Mac users are perfectly content with the Apple mouse, a cordless mouse at a list price of $149 must be considered an expensive novelty. Although the cordless mouse has sophisticated power-management circuitry, eventually the batteries will go dead, and Murphy's Law guarantees that this will happen at the worst possible moment. A mouse cable may occasionally get in your way, but it serves as a tether to keep the mouse firmly attached to the computer. A cordless mouse enjoys no such security, and in the chaos of a typical user's desk, it might constantly get lost or misplaced. Mobius should have at least provided a stick-on holster or pocket where the cordless mouse could be stowed when not in use.

We tested the cordless mouse receiver for interference from other IR remote control devices—this might be a problem in a media lab or video production studio. Fortunately, the mouse would not respond to spurious signals from any TV, stereo or garage door remote controller we tried.

The best application for this product might be for users who use slide-show presentation software, such as Microsoft PowerPoint, Aldus Persuasion or Cricket Presents. A speaker could move around the room more freely, using the cordless mouse to step though a sequence of frames.

The cordless mouse is manufactured in Hong Kong by BMC. Several other vendors will be offering the product under their own labels. (Mobius Technologies, Inc., 6020 Adeline St., Oakland, CA 94608, 415/654-0556.)

EHMAN 45 MB REMOVABLE CARTRIDGE DRIVE

Published By: Ehman
For: Macintosh
Suggested Retail: $749
Reviewed By: Mike Markowitz

The Syquest 45Mb removable cartridge drive is a *de facto* standard that developed almost entirely without the support of Apple Computer. Half a dozen manufacturers sell the drives under their own brands; Ehman has now set a new low price of $749.

The cartridge is a magnetic platter in a plastic case about 5.25" square. A shutter is pushed aside when the cartridge is inserted in the drive, allowing a conventional read/write head to almost touch the platter. This sounds fragile, but the drives have proven very robust in service. The 30,000 hour "Mean Time Between Failure" is better than typical floppy drives; worse than a quality hard drive. The formatted capacity is about 42Mb, with an average access time of 25 milliseconds and a theoretical data transfer rate of 1.25Mb/sec.

The Ehman drive has an audible fan. The SCSI ID is set with a push-button switch. Both SCSI ports use a DB-25 connector, rather than the more common 50-pin connector. The special cable is included with the drive. To eject a cartridge, you first dismount it by dragging its icon to the Trash, then press a button, wait for the platter to spin down (a red LED stops flashing) and move a rather flimsy lever, which trips an ejection spring.

A removable cartridge drive is much faster than any tape drive, and unlike tape, it can

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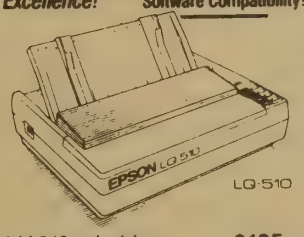

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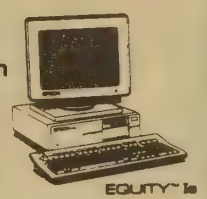

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A removable cartridge drive is much faster than any tape drive, and unlike tape, it can function as a hard disk when it is not used for backup.

function as a hard disk when it is not used for backup. When you run out of space on the platter, another cartridge costs about $79. Cartridges formatted on one brand of drive seem to work without problems on other brands.

The drive is shipped with a cartridge formatted for a Mac Plus (1:3 interleave). If you have a faster CPU, you should reformat the cartridge for optimal performance. A no-frills utility disk is provided to format, partition and verify the cartridge. A small INIT file (SQ-555) placed in your system folder causes the Finder to treat the cartridge like a floppy disk. Unfortunately it also seems to conflict with Apple File Exchange (AFE). When AFE is launched, it "sees" the cartridge as the first floppy disk, gets confused trying to read it, and leaves you trapped in a dialog box with no exit. The only solution is to turn off the drive and restart.

Documentation includes a SCSI Hard Drive manual of 100 pages and a 14-page booklet describing the specifics of the removable cartridge drive. The Ehman drives are internally terminated—you must open the case to remove the terminating resistors.

At this writing, advertised prices ranged from $975 to over $1100 for the same mechanism packaged by competing vendors. For a higher price you might get better documentation, or bundled utility and public domain software. In a few years, erasable optical media holding vastly more data may be available at the same price point, but right now, the 45Mb removable is a cost-effective solution for mass storage. (Ehman, 97 South Red Willow Rd., Evanston, WY 82930, 307/789-4656)

MACINTOSH SOFTWARE

WORD PROCESSORS

WriteNow is accessible—the manual is clear, and almost everything is available from pull-down menus.

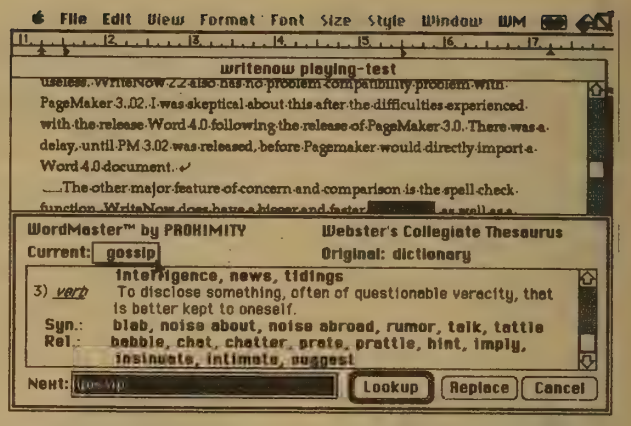
WRITENOW 2.2

Published By: T/Maker
For: Mac
Suggested Retail: $195
Reviewed By: Michael Robin

Although T/Maker compares WriteNow to other low and mid-range applications, most people I know are really interested in how it compares to Microsoft Word—perhaps the most prevalent word processing program.

WriteNow is a lot more accessible than Word. The manual is clear and concise, and almost everything you need to know is available through the pull-down menus. There are very few hidden options. The few that are, like tab leaders, are easily found and explained in the manual.

WriteNow's much-touted speed is no mere marketing claim, as becomes obvious when you do a word count. WriteNow not only word-counts a document significantly faster than Word, but the function itself is very well-designed. In addition to word, character and paragraph counts, WriteNow also calculates the average characters per word and average words per paragraph. This may not seem important, but these averages often indicate longwinded writing.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writenow playing-test
PageMaker 3.02. I was skeptical about this after the difficulties experienced with the release Word 4.0 following the release of PageMaker 3.0. There was a delay, until PM 3.02 was released, before Pagemaker would directly import a Word 4.0 document.
The other major feature of concern and comparison is the spell check
WordMaster™ by PROHIMITY
Webster's Collegiate Thesaurus
Current: gossip
Original: dictionary
intelligence, news, tidings
3) verb To disclose something, often of questionable veracity, that is better kept to oneself.
Syn.: blab, noise about, noise abroad, rumor, talk, tattle
Rel.: babble, chat, chatter, prate, prattle, hint, imply, insinuate, intimate, suggest
Next:
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Replace
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WordMaster Thesaurus provides several definitions and the synonyms, antonymns and related words for each definition. It also displays the original, the current word looked-up and a summary in a pop-up menu.

Since I'm a Word user, one of my favorite enhancements is the increased compatibility of WriteNow with other formats. It allows you to open or save documents in WriteNow, Text, Text with line breaks, MacWrite, Microsoft/Write or RTF formats. You will not have to make sure you save into Text or RFT to be able to open a Word document in WriteNow. WriteNow 2.2 also has no compatibility problem with PageMaker 3.02—something I was skeptical about after my experiences with PageMaker 3.0 and Word 4.0.

Also good are the new Thesaurus and Dictionary. WriteNow does have a bigger dictionary than Word 4, as well as a smaller "pocketbook" dictionary for users with limited space on their Mac, a dictionary of "buzz words" and an empty dictionary for you to build your own specialized dictionary. WriteNow 2.2 also remembers words that you tell it to ignore but do not want to add to the dictionary.

WriteNow 2.2 includes a 1.4-million-word WordMaster Thesaurus DA. Although it only works with WriteNow, unlike the WordMaster that comes with Word, this feature alone is a good reason to use WriteNow. Not only is a 1.4 million word thesaurus impressive, but more importantly, it is easy to use, has more entries than the thesaurus with Word, and provides more useful information. It shows the word you are looking up, definitions, synonyms, antonyms and related words. For many entries, comparison and contrast entries are presented. WordMaster displays the original word, the current word, and a summary in a pop-up menu.

WriteNow lacks some Word functions: sort, calculate, style sheets, small caps, borders, vertical lines, double and dotted underline, outline and indexing options. T/Maker does not claim to be an all-powerful application, but it clearly stands up well against the "big" guys.

The determined "power user" might want to stick to Word, or perhaps Nisus or FullWrite Professional for specialized features. For the rest of us, WriteNow is near the top, if not at the very top, of the list of word processing applications to use. (T/Maker, 1390 Villa St., Mountain View, CA 94041, 415/962-0195)

ACADEMIC SOFTWARE

INTERACTIVE PHYSICS

Published By: Knowledge Revolution
For: Macintosh (Plus, SE, II or later)
List Price: $495
Reviewed By: Mike Markowitz

"Thought experiments" have played an important role in the history of physics. Consider Galileo's famous experiment from the Tower of Pisa. He supposedly dropped a large cannon ball and a small one at the same instant. Aristotle had written, and everyone believed, that a heavy object falls faster than a light one, because the earth attracts it with a greater force. Actually, the earth attracts every object with sufficient force to make it fall 32 feet during the first second, 64 feet during the next second, and so on. The everyday experience of the effects of air resistance prevented people from realizing this simple truth. In the air, a stone falls faster than a feather, but in a vacuum, both fall at the same rate.

It takes only a few clicks to set up and run this experiment in Interactive Physics. You can even vary the force of gravity—something even the best-equipped earthbound laboratory cannot manage.

Interactive Physics is a laboratory on a disk. The package is a deceptively simple Newtonian erector set of forces and masses. It looks very much like any object-oriented drawing program, with a tool palette for

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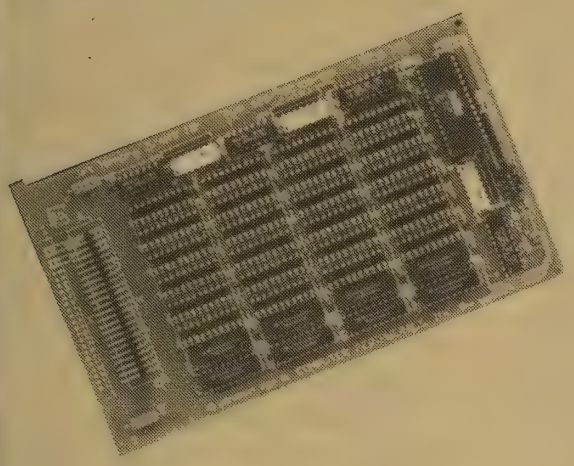

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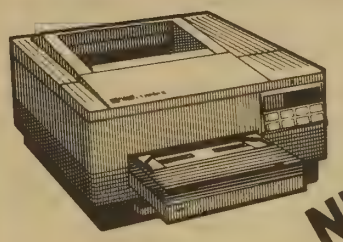

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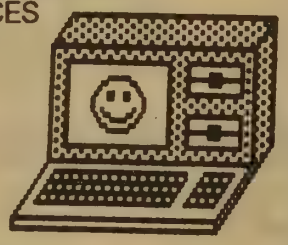

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making circles, rectangles and polygons. Other objects include ropes, springs, dampers and forces. Menu bar options let you control and alter the force of gravity, air resistance, friction, density and many other variables.

Behind this simple exterior lies a powerful simulation model and a sophisticated animation engine. At the beginning of each time step, the program calculates all forces acting on the objects you created. The objects are moved accordingly until the end of the time step, and a snapshot of the resulting situation is used to create a frame of the animation. A time step can be any value between 0.001 sec. and one second. Using the metaphor of a tape player, the program lets you run the experiment at different speeds, freeze the action, or even run it backwards. You can also turn on "tracking" which leaves an imprint of each moving object on the screen.

To help analyze the results of your experiments, the program provides 17 different kinds of "Meters" to display variables or properties of interest, such as acceleration, momentum, and torque. Any meter can be shown as a digital read-out, an analog gauge, or a strip-chart, and you can even adjust the sensitivity range.

The "world" of Interactive Physics is Flatland—the imaginary two-dimensional space that is so much easier to manage, computationally, than the three-dimensional reality we inhabit. The scale of the program is variable, but the default "world" size is a ten-meter square. The present program does not model orbital mechanics—the computational burden would require a math co-processor, ruling out the Mac Plus as a platform. This feature is under consideration for a possible future version of the program.

Demonstration files on the program disk include "Chaotic pendulum"—three weights tied together with ropes in a deceptively simple system that quickly becomes disorderly, and "Falling

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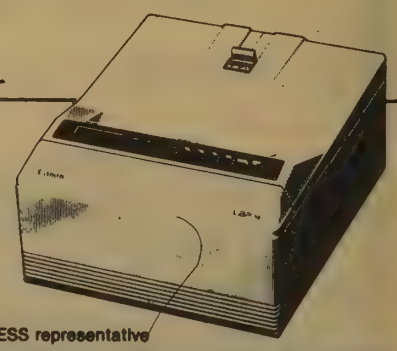

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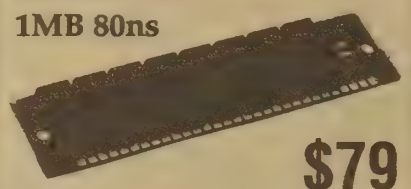

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stack" which models a very difficult problem—at what point will a falling smokestack snap into two pieces? Along with the program disk, there is an "Experiments" disk containing a large number of carefully crafted examples, organized in folders that correspond to major topics in the Physics curriculum.

An illustrated 103-page manual provides clear explanations of the program's many options. Step-by-step tutorials guide the new user through the operation of the program. A basic knowledge of high-school physics is assumed.

The program was written in Object Pascal using Mac App. Certain time-critical routines were coded in assembly language. Interactive Physics was created by Martin Eisenmann, a student of physics and computer science (age 22) and David Baszucki, an electrical engineer (age 26).

Registered owners of the program receive occasional mailings of Physics Interactions, a disk containing problems or experiments created with the program, along with supporting lesson material in MS Word format.

Interactive Physics is a powerful argument for buying a Macintosh for classroom use in any college or high school science program. I have attended two different presentations where top Apple executives showed off the program as an example of what Macintosh can do better than any other computer. Not bad for the first product of a small software company. (Knowledge Revolution, 2121 South El Camino Real, Suite 515-H, San Mateo, CA 94403, 415/377-1940)

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GAME REVIEWS

By Mike Markowitz

The games in the Carmen series are exercises in pursuit and deduction. Some clues suggest the next place and time to which your suspect has fled. Other clues, harder to ferret out, lead you, by a process of elimination, to determine which member of Carmen's gang your particular suspect must be.

WHERE IN TIME IS CARMEN SANDIEGO?

Published By: Brøderbund
For: IBM PC and compatibles, Apple II
Suggested Retail: $44.95

If most American students regard history with the same sort of aversion that the President reserves for broccoli, perhaps it is because history is usually taught in such a pedantic or trivial way. We study the past to understand the origins and causes of things we see in the present, to know what worked and what didn't (like Fascism). We study the past to celebrate the diversity of human experience, to wonder at what has survived and to grieve over what was lost. Too often, however, we study the past to be able to answer multiple choice questions about the Emancipation Proclamation (Lincoln, 1862) or the Thirty Years' War (Central Europe, Protestants vs. Catholics, 1618-1648).

A new educational game from Brøderbund, Where In Time Is Carmen Sandiego? joins three other titles in a wildly successful series (Where In The World..., Where In The USA..., and Where In Europe...). The package includes a copy of the *New American Desk Encyclopedia*, which packs an amazing amount of information into 1374 pages. The idea is that you have to use the reference book to interpret the clues you discover in the game.

The Apple II version requires only 128K, and the color graphics are not such that you lose much by playing on a monochrome system. On a IIGS the system speed should be set to "Normal." With two floppy disks (four sides), playing on a one-drive system requires a lot of swapping, but (at last!) the game is hard-disk installable (396K of files).

The game is quite challenging, since you have only a limited number of "hours" of authorized time travel, and you burn them up fast while tracking the villains. The games in the Carmen series are exercises in pursuit and deduction. You get several different kinds of clues. Some clues suggest the next place and time to which your suspect has fled. Other clues, harder to ferret out, lead you to determine which member of Carmen's gang your particular suspect must be.

Unfortunately, there are only 12 countries and about 1200 "facts" present in the database. Perhaps this was an unavoidable compromise due to disk space. Teachers report that kids love these games for the adventure. I hope that Carmen's gang is planning to steal a starship next, so we can enjoy "Where In The Universe..?" It would be a great way to teach the facts of astronomy.

QUICK BYTES

A funny thing has happened to games for the IBM PC and compatibles—they have gotten really good in the past year. Previously, many titles were feeble conversions of games that looked and played much better on Commodore, Atari or Apple hardware. There are several reasons for the increasing quality of PC games, most of which can be summed up under the term "critical mass."

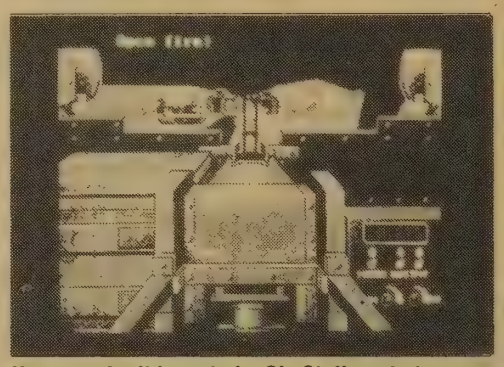
There are several reasons for the increasing quality of PC games, most of which can be summed up under the term "critical mass."

There are more than 35 million PCs and compatibles out there, and perhaps 25% have the CPU horsepower and the color graphics (EGA, VGA, MCGA) to support excellent simulations. More games are supporting high-quality sound boards like the Ad Lib, CMS, and Roland MT32. The Nintendo boom has helped to persuade the venture capitalists and investment bankers that there are profits to be made in high-tech entertainment.

Here are a few noteworthy recent examples, from sea, land and air:

Gunboat:

River Combat Simulation (Accolade) $49.95. Requires 512K, 8MHz or higher speed recommended. Did you like the little PBR (river patrol boat) in *Apocalypse Now*? Is the Jungle Boat your favorite ride at Disneyland? Here are 20 realistic missions along the mosquito-infested backwaters of Vietnam, Colombia and Panama. The terrain is rendered in realistic 3D polygon fills, enriched with bit-mapped enemies and landmarks. You can alternate between four different battle stations, with different views of the passing scenery. Now you don't have to be Sly Stallone to tear up the rain forest with .50 cal machine guns.



Now you don't have to be Sly Stallone to tear up the rain forest with .50 cal machine guns.

Tank:

The M-1 Abrams Tank Simulation (Spectrum Holobyte) $59.95. Requires 640K, PC-AT or equivalent, EGA or VGA graphics, joystick optional. Based on simulation software developed for the US Army's Armor school at Ft. Knox, this is the best tank game yet. Terrain and vehicles are simply rendered as filled 3D wireframes, while your tank's interior is displayed in detailed bit-map graphics. You can command a company, a platoon or an individual tank, and there are enough different maps and views to provide good situational awareness. Both 5.25" and 3.5" disk formats are provided, and the documentation, modeled on the style of a real Army manual, is superb.

The new generation of digital flight controls on aircraft like the V-22 Osprey certainly make the simulation programmer's job easier.

LHX Attack Chopper:

(Electronic Arts) $59.95. 512K required, 640K recommended, keyboard, joystick or mouse. Helicopter flight simulations have always been among the most disappointing computer games. The controls of a helicopter (collective and cyclic control levers, throttle, pedals, etc.) are a complex exercise in coordination, and the mechanics of turning, hovering and transition to level flight require a lot of training to master. A new generation of digital flight controls on aircraft like the V-22 Osprey and the proposed LHX light attack helicopter promise to make the pilot's job easier. They certainly make the simulation programmer's job easier.

The game provides four different helicopters, three different terrains (Germany, Libya, and Vietnam), and hundreds of possible missions. 3D polygon graphics and multiple viewpoints reflect the best current state of the art. The stylish 120-page manual is packed with information on weapons and tactics.

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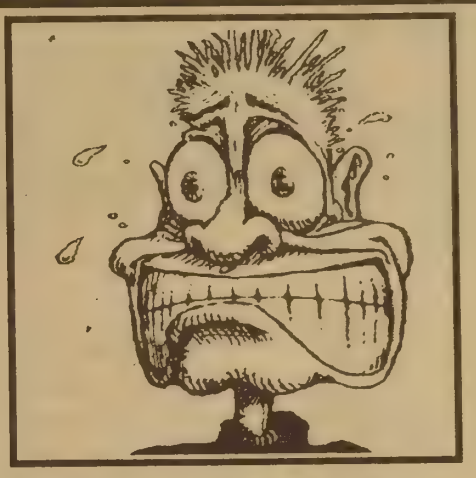

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June 2–4 The Seventh Annual ShowBiz Expo: Worlds Fair Of Film & Video. Los Angeles. Live Time, Inc. Call: (213)668-1811.

June 3 East-West Computer Show & Sale. Oxnard. East-West Shows. Call: (415)388-8893.

June 3–6 COMDEX Spring '90. Atlanta. The Interface Group, Inc. Call: (617)449-6600.

June 4–7 1990 Progress Users Conference. San Diego. Progress Software Corporation. Call: (617)275-4500.

June 5–8 Computer Graphics: Software Techniques & Hardware Components Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 5–8 Hands-on PC Configuration And Troubleshooting Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 5–8 Structured Analysis & Design Methods Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 11-15

TECHNICAL CONFERENCE AND EXHIBITION

Anaheim

USENIX, the technical and professional association of UNIX users, is holding its Summer 1990 Technical Conference And Exhibition in Anaheim. The Conferences are dedicated to fostering the development and communication of research and technological information and ideas pertaining to UNIX and UNIX-related systems. Most meetings will be at the Anaheim Convention Center and the Vendor exhibition will be held at the Anaheim Marriott Hotel. Preregistration deadline is Monday, May 21. Contact USENIX Conference Office, 22672 Lambert St., Ste. 613, El Torro, CA 92630. (714)588-8649,Fax (714)588-9706.

June 9 4th Annual dDAY Fair. Woodland Hills. Valley West dBASE Users Group. Call: (818)889-7450.

June 9 Computer Marketplace Show. Pomona. Computer Marketplace. Call: Bob Kushner, (408)778-5200.

June 10 Shop Till Ya Drop Computer Swap. Glendale. Richard James. Call: 1-800-433-7469.

June 11–13 1990 Nantucket Developer Conference. Palm Desert Dimensions, Inc. Call: 1-800-247-4481

June 11–14 Disk Drive Technology Seminar. Irvine. Zadian Software. Call: (408)723-0594.

June 11–15 8th International Congress Of Cybernetics And Systems Conference. New York. CUNY. Call: Kathy Jaeger, (212)772-5213.

June 11–15 USENIX Technical Conference & Exhibition. Anaheim. USENIX. Call: Spencer W. Thomas, (714)588-8649.

June 12 Computer Swap Meet. Culver City. UCLA PC Users Group. Call: (213)473-6668.

June 12–15 Autodesk Expo '90. Atlanta. DesCon. Call: 1-800- 451-1196, or (203)666-6097.

June 15 AT Disk Interface Seminar. Irvine. Zadian Software. Call: (408)723-0594.

June 15–17 AppleFiesta '90 Tempe, AZ. AzApple/Mac User Group. Call: (602)943-2020.

June 16 Shop Till Ya Drop Computer Swap. Northridge. Richard James. Call: 1-800-433-7469.

June 16 Computer Marketplace Show. Long Beach. RK Productions. Call: 1-800-252-7927.

June 17 East-West Computer Show & Sale. San Diego. East-West Shows. Call: (415)388-8893.

June 17–19 SCSI Seminar. Irvine. Zadian Software. Call: (408)723-0594.

June 19–21 Domain Analysis For Software Reuse In Ada And C++ Course. Los Angeles. UCLA Extension. Call: (213)825-3344.

June 19–21 Eighth Annual PC Expo. New York. H.A. Bruno, Inc. Call: Annie Z. Scully or Mark Haviland. 1-800-444-3976.

June 19–22 Hands-on Datacomm Troubleshooting Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 19–22 Image Processing & Machine Vision Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 21–23 ACM Tutorial Week '90. Los Angeles. The Association for Computing Machinery. Call: Dave Oppenheim, (818)785-8000.

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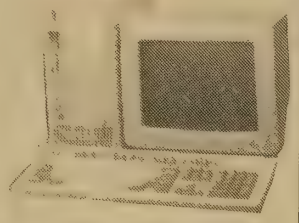

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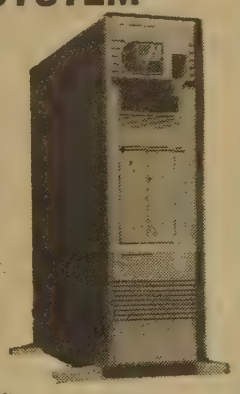

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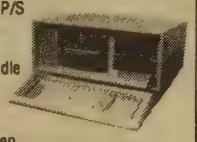

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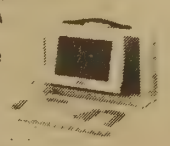

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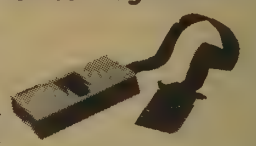

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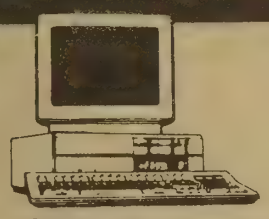

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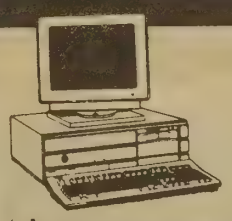

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August 14–17 Computer Graphics: Software Techniques & Hardware Components Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 14–17 Computer Network Architectures & Protocols Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 18–19 Computer Marketplace Show. Orange County. RK Productions. Call: 1-800-252-7927.

August 19 East-West Computer Show & Sale. San Diego. East-West Shows. Call: (415)388-8893.

August 21–24 Introduction To Telecommunications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 25–26 Computer Marketplace Show. Ponoma. RK Productions. Call: 1-800-252-7927.

August 28–31 OS/2: A Comprehensive Hands-on Introduction Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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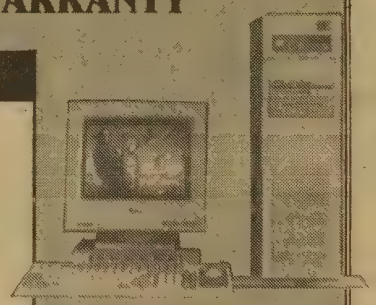

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Southern California Ventrua Publisher User Group. Meetings: last Wed., 7:00 pm. (818)955-5830. [Exp. #75.]

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Epson User Group of Orange County. Meetings: 3rd Sat, 10:00 am, Westerm Federal Savings & Loan. Call, Bill Lafitte (714)548-1741 or 974-5072. Support, parts, library—QX, PX, Equity, VALDOCS, CP/M, MS-DOS. [Exp. #72]

IBM & COMPATIBLES

Greater South Bay Users Group. Meetings: 2nd Wed., 7:30 pm, Fellowship Hall, rear of Christ The Lutheran Church, 2706 W. 182nd St., Torrance SIGs, BBS, newsletter, library and more. Call: Pamela Harrison, (213)373-4465. [Exp. #70]

North Orange County Computer Club (NOCCC). (714)998-8080. [Exp. #75.]

Orange Coast IBM-PC User Group. Meetings: Last Sat., 9:00 am, Orange Coast College, Costa Mesa. Call: Robin Clark, (714)843-2048. [Exp. #70]

Orange County IBM-PC Users Group. Meetings: 2nd Tues., 7:00 pm, Computer Learning Center, 1240 S. State College Blvd., Anaheim. Call: Mike Lyons, (714)774-3236. Meetings feature guest speakers, sharing tips and problems, access to club library and newsletter. [Exp. #70]

Pasadena IBM Users Group. Meetings: 3rd Wed., 6:30 pm, Caltech, Bridge bldg., rm 201. Call: Steve Bass, (818)795-3200. 3 hr. meetings have speakers on hardware and software topics including "tips and tricks," "stump the stars" and vendor demonstrations. Includes group library, newsletter, SIGs and BBS. [Exp. #70]

South Orange County Computer Club (SOCCC). (714)554-1709. [Exp. #75.]

SWPC User Group. Meetings: 3rd Sat., mornings, various places. Call: Christine Tripp, (213)935-4105. [Exp. #70]

KAYPRO

The Lakewood/Long Beach KUG (Kaypro Computers). Meetings: 2nd Wed., 7:30 pm, Mid Cities Bank, 9025 E. Artesia, Bellflower. Call: Mark Motley, (213)928-9096. [Exp. #70]

LOTUS & BUSINESS

Lotus and Business SIG. Meetings: 1st Sun. (verify at (718)998-8080). 11:15 am., Chapman College, City of Orange, Hashinger Hall. Call: Vance Jochim, (714)962-2517. SIG of 1200-member N. Orange County Computer Club. [Exp. #70]

MACINTOSH

Pomona Valley 99ers. Meetings: 2nd Mon., 7:00 pm, First Federal, 9900 Central Ave. Call: Bill Harms, (714)628-1334. [Exp. #70]

San Gabriel Valley Mac Users Group. Meetings: 1st Thurs., 7:30 pm., 285 E. Walnut, Pasadena Central Library Auditorium. Call: Char Rice, (213)684-4266. [Exp. #70]

SBAMUG—South Bay Apple Mac User Group. Meetings: last Wed., 7:30 pm, Pacific School, 1214 Pacific Ave., Manhattan Beach. (213)316-7738. [Exp. #75.]

Whittier Area Mac Users Group. Meetings: 2nd Sat., 10:00 am, 11818 S. La Mirada Blvd., Granada Heights, Friends Church, rm C-21. Call: Char Rice, (213)947-2447. [Exp. #70]

TEXAS INSTRUMENTS

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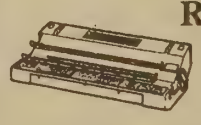

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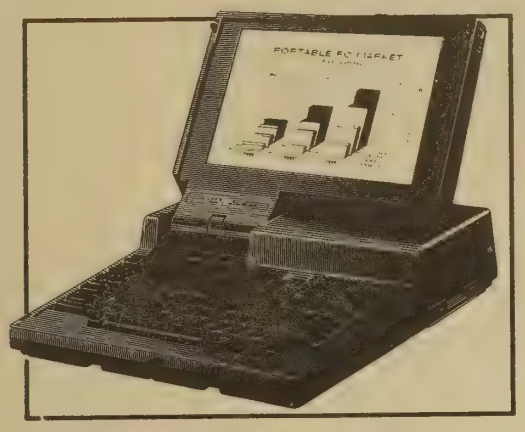

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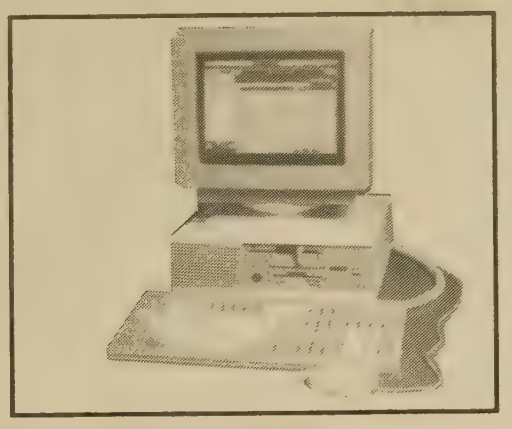

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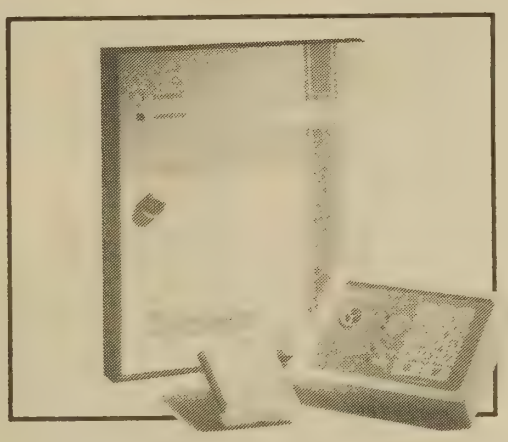

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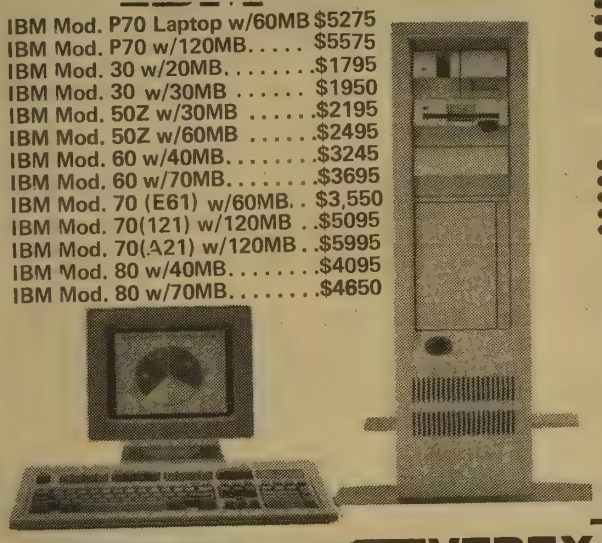

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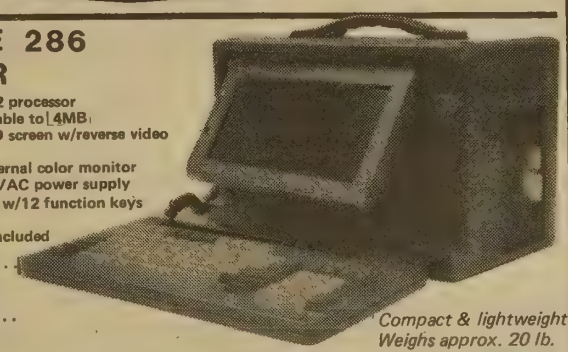

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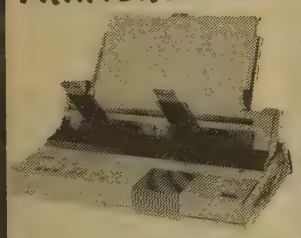

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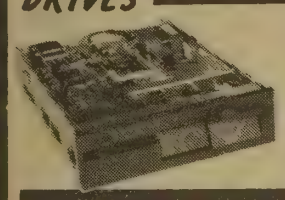

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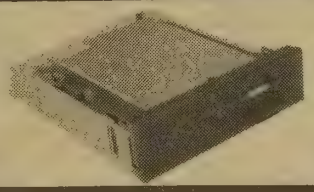

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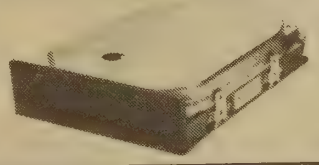

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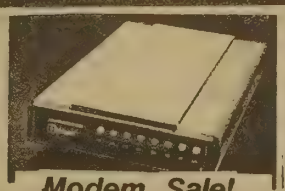

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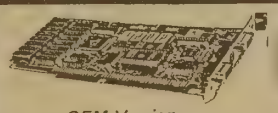

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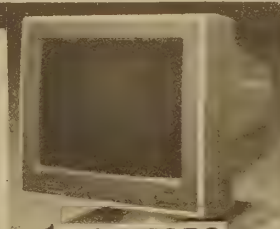

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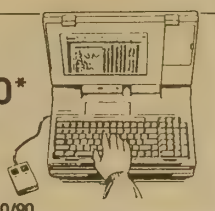

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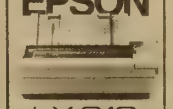
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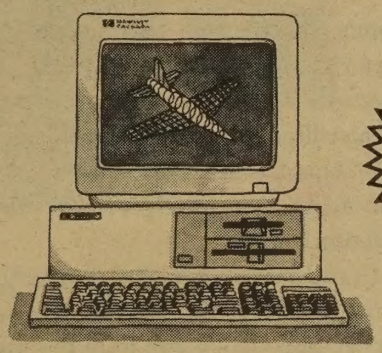

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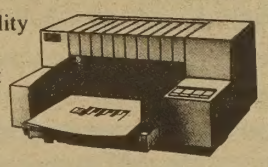

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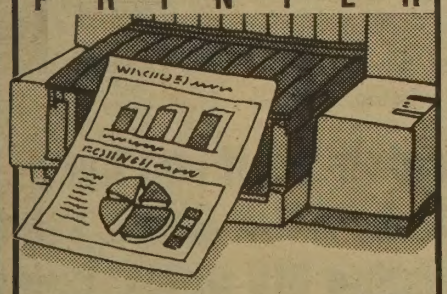

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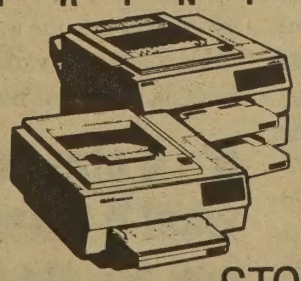

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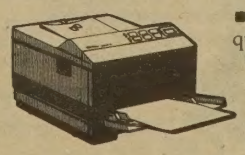

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Another Dvorak Nightmare

Lifestyles Of The Rich And Famous

BY JOHN C. DVORAK

Everyone is preoccupied with rich guys in Silicon Valley. Ever since I wrote last month's article with the open letter to super-rich guy Bill Gates and plain-rich guy Steve Jobs, I've had other magazines asking me to do more of the same. One editor suggested that I do a whole column suggesting to Gates how he spend his money. Sounds like consulting work to me.

I thought about all this, and realized how great it is that Gates in particular and many of the other rich guys in the computer business don't bore us stiff with ludicrous conspicuous consumption. Instead, they go to work each day and continue to do what they did to get rich in the first place.

I've had more guys say to me, "Gee, John, how can these guys go to work? Why do they bother? If I had a mere $100 million I'd be outta here." Of course these gadflies who would be shopping for an island to buy if they had the money will never have the money with that attitude.

It's a classic catch-22. If you have what it takes to be a Bill Gates, then you are stuck being Bill Gates. Gates is always working. Sure, sometimes he sneaks off to Japan and eats a piece of fish, but he's not planning on buying Costa Rica or anything like that.

DVORAK'S LAST COLUMN

I'm grateful. Most of the big shots in the industry who spend their money on wild women and gold-plated toilet fixtures are insufferable bores.

The CEOs-From-Hell Dream

Nonetheless, it didn't prevent me from having a nightmare where our heroes all turned into free-spending lunatics.

It was Gates, smoking the biggest Havana cigar I've ever seen, who pointed up at the Lear Jet. "Look, it's Manzi's new jet! He's flying it, too!" The jet zoomed over the 200-foot anchored motor cruiser and did a barrel roll as it turned and headed for the nearby landing strip Gates had built near Lake Washington.

Within a few minutes a skip was seen coming from the shore. It was bringing Jim Manzi to the boat.

"Hey Manzi, you old son of a gun," yelled Gates at the approaching vessel. He grabbed a nearby bottle of Dom Perignon from a huge silver wine bucket filled with a couple of cases of the stuff. "Here Dvorak, shake this up. We'll give this bozo a wet welcome." Gates laughed and suddenly choked for a second, blowing the hot ash off of his new cigar. "Damn, I just lit it!" He threw it over the side and grabbed another bottle of champagne.

"The trick is to get all this crap off the bottle first." Gates took off the lead foil and the wire holding in the cork. "Then shake it like this." He shook the bottle violently and suddenly with a blast the cork blew out of the container and hit the top of the skip. "Wow, I almost nailed him! Here, Dvorak, you need a drink. Hahahaha!" He dumped the remaining contents of the bottle over my head. He then threw the bottle at the boat as it tied up with the yacht.

The bottle crashed against the stern of the boat, spewing glass all over. Manzi ducked when he saw the bottle coming and came up holding a flare gun. "Hey, Bill! Look out!" Just as he shouted he launched the flare, which shot past Gates's head, barely missing. The flare hit the door to one of the cabins and exploded into flames. Almost instantly, six crewmen with fire extinguishers foamed the area, making an ungodly mess.

Gates leaned over to me and whispered. "He always does that. Look what I have. This will get him. Haha!" With his back to Manzi, who was now coming on board, Gates showed me a stun gun. "This baby has been really juiced up. I think I've got it wired for a few million volts. Watch his reaction."

"I'm here, let the parteeeee begin!" said Manzi as he approached Gates, who turned and fired before Manzi could do much of anything but watch as two little hooks shot from the stun gun and attached themselves to his thigh. "What the..." Manzi was about to speak as Gates pushed the button of the device.

It sounded like a shot from a .44 Magnum as the surge of high voltage hit him like a ton of bricks. He flew straight up about 12 feet and spun in mid air, then came crashing to the deck. Every muscle in his body was in spasm, and he flopped around the deck like a salmon.

Gates pushed the button to the stun gun again, but nothing happened. "Damn, it must have killed it." He threw the device at Manzi and it bounced off his head. Suddenly Manzi, like a chicken with its head cut off, jumped up and ran full speed the length of the boat and right over the side.

"Damn," said Gates. "Did you see that? I guess we should fish him out."

He motioned to a crew member to get a gaff and pull out Manzi. Just then Steve Jobs came up from below deck. He brought up with him John Sculley, completely tied up and gagged. Sculley, with so many ropes on him he looked like a mummy, hopped up the steps following Jobs, who held a leash hooked to a dog collar around Sculley's neck. "Check this out!" shouted Jobs. "Let's make him walk the plank."

Suddenly I noticed all sorts of computer guys on board. Rod Canion, Mitch Kapor, Philippe Kahn, everyone seemed to be on this thing, and they were now all chanting, "Walk the plank! Walk the plank!"

As they chanted, Sculley tripped and fell onto a control console near the side of the yacht, triggering a mechanism that opened the roof of the boat to reveal a bank of guided missiles. Philippe looked at the rockets, pulled out a .45, and fired it into the air, shouting "Let's shoot some missiles!"

Jobs began to kick Sculley, then looked over at me. "Let's tie Dvorak to one of them!"

"Dvorak, Dvorak, Dvorak," chanted the crowd. Gates threw another cigar into the water and looked at me with a smirk on his face.

It's then that I woke up in a cold sweat. Man, am I'm glad we're keeping these guys busy working. ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

It's a classic catch-22. If you have what it takes to be a Bill Gates, then you are stuck being Bill Gates. Gates is always working. Sure, sometimes he sneaks off to Japan and eats a piece of fish, but he's not planning on buying Costa Rica or anything like that.

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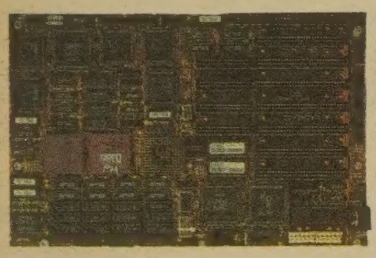

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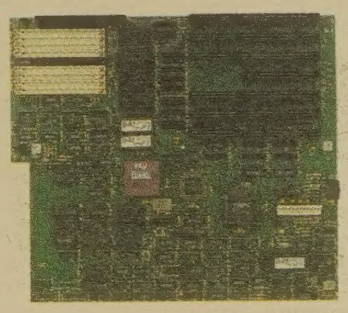

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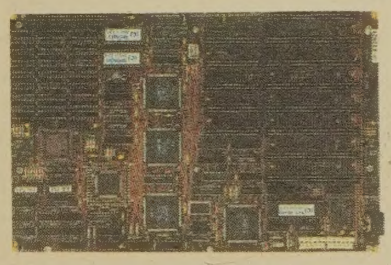

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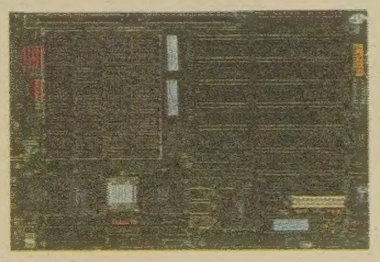

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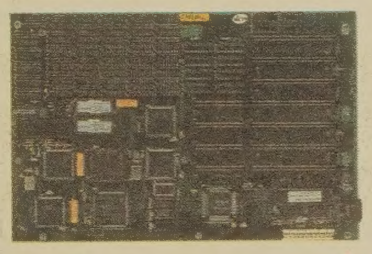

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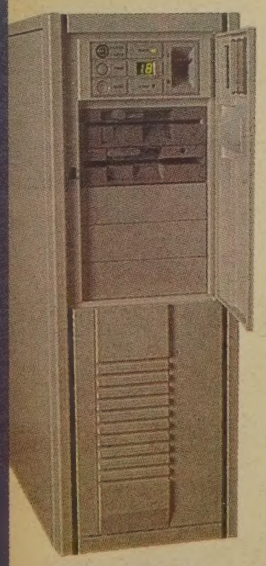

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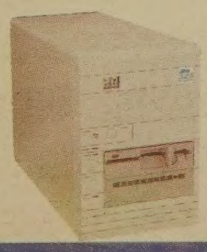

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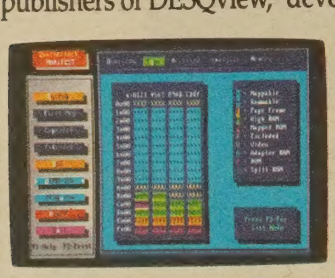

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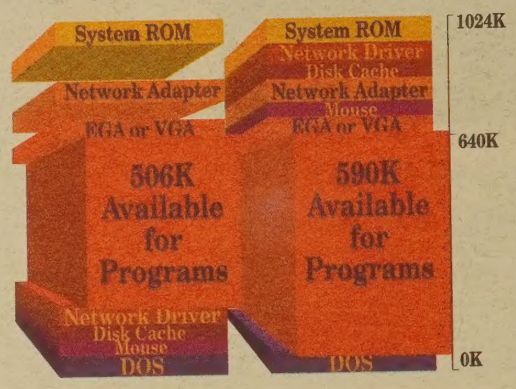

Before **After**

Your memory is full of holes. We can fill them. And give your programs more room to run smoothly.

Best of all, you don't need a PhD to understand what you're doing. Manifest's interactive operation tells you how to use the program and what benefits you can expect.

Introducing QRAM™—the Quarterdeck memory optimizer

If you have an EMS 4.0 or EEMS board, QRAM (pronounced cram) can use it to free up more memory within the 0K to 640K area. Gain the additional 30-130K you need for those big programs and files. It looks at your AUTOEXEC.BAT and CONFIG.SYS files and figures out which TSRs, network and mouse drivers and DOS resources can be moved out of program memory.

And if you have an EGA or VGA-equipped PC and don't need graphics at the moment, QRAM will make an additional 96K of memory available! When you need graphics again, QRAM will switch you back to graphics mode! Think how helpful that will be for those big dBASE files.

QRAM can't work miracles, but if there's memory available anywhere, QRAM lets you use it to boost your PCs performance.

QRAM is available bundled with Manifest for just a few dollars more than Manifest alone.

Manifest and QRAM—two more examples of Quarterdeck's commitment to giving you the most productivity out of the PC and software you own today.

Introducing two new Quarterdeck Expanded Memory Managers™ QEMM 50/60 and QEMM-386

QEMM is the all-in-one memory manager for breaking the 640K barrier.

QEMM 50/60 is for the PS/2™ series 50 and 60. It works with all IBM-compatible memory boards, and comes with a long list of adapter data to help you use your MCA hardware better.

QEMM-386 is for all 386-based computers, including older PCs with 80386 upgrade boards. It allows you to expand your RAM capacity—all the way to 32 megabytes, if you like.

Both give you expanded memory compatible with EMS 4.0 and EEMS. Both are also extended memory managers, compatible with XMS.

And both give you maximum control over your memory in the 640K-1024K area, guiding you through decisions on where to move TSRs and network drivers for maximum performance.

Manifest, QRAM, QEMM, and DESQview, our multitasking windowing environment—they're all designed to help you get the most from the software and PC you have today.

System Requirements

Manifest: 8088, 8086, 80286 80386 and i486 PCs & PS/2s

QRAM: 8088, 8086, 80286 PCs. Use of high memory is only available when PC has EMS 4 or EEMS expanded memory or Chips & Technologies shadow RAM.

QEMM 50/60: 80286-based PS/2s and compatibles with IBM PS/2 80286 Memory Expansion Option, IBM PS/2 80286 Expanded Memory Adapter/A or compatible.

QEMM-386: 80386-based PCs and PS/2s and PCs with 80386 add-in boards.

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